

**The Republic of South Sudan**

**Ministry of Agriculture, Forestry, Cooperatives and Rural Development**

**Ministry of Livestock and Fisheries Industries**

# **Comprehensive Agricultural Development Master Plan**

## **Final Report**

**May 2015**

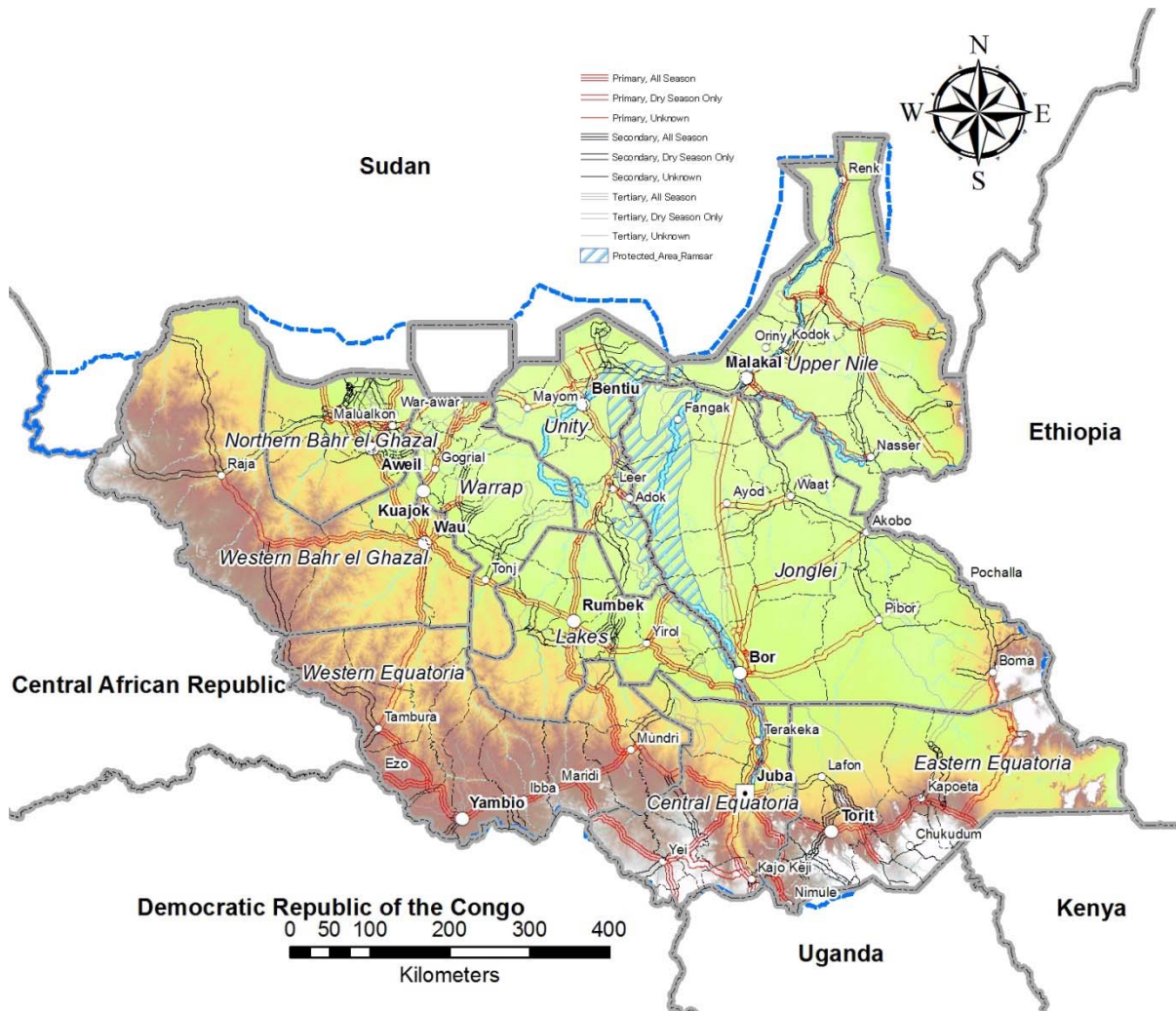
**Japan International Cooperation Agency**

**JIN Corporation**

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# Map of South Sudan



Source: Data from the National Baseline Household Survey 2009.  
 Prepared by NBS/CAMP Task Team



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## Abbreviations

AEO	Agricultural Extension Officer
AfDB	African Development Bank
ASIP	South Sudan Agriculture Sector Investment Plan 2013
ASPF	Agriculture Sector Policy Framework
AWPB	Annual Work Plan and Budget
BSP	Budget Sector Plan
CA	Competent Authority
CAADP	Comprehensive Africa Agriculture Development Programme
CAB	County Annual Budget
CAHW	Community Animal Health Worker
CAMP	Comprehensive Agricultural Development Master Plan
CAMP/IDMP ICS	CAMP Implementation Coordination Structure
CAMP/IDMP ICTT	CAMP Implementation Coordination Task Team
CAMP IP	CAMP Investment Plan
CAMP TT	Comprehensive Agricultural Development Master Plan Task Team
CBEW	Community Based Extension Worker
CDO	Community Development Officer
CFSAM	Crop and Food Security Assessment Mission
CIDA	Canadian International Development Agency
CO	Cooperative Officer
COMESA	Common Market for Eastern and Southern Africa
CPA	Comprehensive Peace Agreement
CTC Yei	Crop Training Centre Yei
DFID	Department for International Development
DoFAD	Department of Fisheries and Aquaculture Development
DP	Development Partners
EAC	East African Community
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FBO	Farmer Based Organisation
FTC	Fisheries Training Centre
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German Agency for International Development)
GOSS	Government of Southern Sudan
GRSS	Government of the Republic of South Sudan
HIV	Human Immunodeficiency Virus
HPF	High-level Partnership Fund
ICT	Information and Communications Technology
ID	Institutional Development
IDA	International Development Association
IDMP	Irrigation Development Master Plan
IDPs	Internally Displaced Persons
IFC	International Finance Corporation
IMAC	Inter-Ministerial Appraisal Committee
IMF	International Monetary Fund
IMSC	Inter-Ministerial Steering Committee
IPS	Investment Planning Space
JICA	Japan International Cooperation Agency
KCB	Kenya Commercial Bank
LSS	Local Services Support

M&E	Monitoring and Evaluation
MAFCRD	Ministry of Agriculture, Forestry, Cooperatives and Rural Development
MARP	Most at Risk Population
MEDIWR	Ministry of Electricity, Dams, Irrigation and Water Resources
MLFI	Ministry of Livestock and Fisheries Industries
MoFEP	Ministry of Finance and Economic Planning
MSY	Maximum Sustainable Yield
MTEF	Medium-term Expenditure Framework
NAB	National Annual Budget
NBS	National Bureau of Statistics
NEAT	National Effort for Agricultural Transformation
NGO	Non-Governmental Organisation
NLA	National Legislative Assembly
NRSWG	Natural Resources Sector Working Group
NTFP	Non-timber Forest Products
OIE	World Organisation for Animal Health
PBSC	Palotaka Basic Seed Centre
PFM	Public Financial Management
PFMS	Public Financial Management System
PPP	Public-Private Partnership
QGDF	Quarterly Government-Donor Forum
RWE	Roundwood Equivalent
SAB	State annual budget
SAR	Situation Analysis Report
SDG	Sudanese Pound
SNV	Netherlands Development Organization
SSCCSE	Southern Sudan Centre for Census, Statistics and Evaluation
SSDI	The South Sudan Development Initiative 2013-20
SSDP	South Sudan Development Plan 2011-2013
SSFSC	South Sudan Food Security Council
SSP	South Sudanese Pound
SWG	Sector Working Group
TC	Technical Committee
ToR	Terms of Reference
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNHCR	United Nations High Commissioner for Refugees
UNOCHA	United Nations Office for Coordination of Humanitarian Affairs
UPA	Urban and Peri-urban Agriculture
USAID	United States Agency for International Development
USD	United States Dollar
WFP	World Food Programme of the United Nations
YARC	Yei Agriculture Research Centre
ZEAT	Zonal Effort for Agricultural Transformation

# EXECUTIVE SUMMARY

## Comprehensive Agricultural Development Master Plan

This report with included annexes contains the findings, recommendations and the investment plan of the Comprehensive Agricultural Development Master Plan (CAMP) project, which was developed between 2012 and 2015.

The Government of the Republic of South Sudan realised the need to formulate a comprehensive master plan for the development of the nation to address hunger and food insecurity, to improve rural livelihoods and generate income, and to diversify the economy through a modernised and competitive agricultural sector. The government took the decision to formulate CAMP and formally requested technical assistance from Japan International Cooperation Agency in November 2011.

Formulation of CAMP began in July 2012 in Juba with the arrival of consultants and the formation of the Task Team, headed by a senior staff member from the Ministry of Agriculture, Forestry, Cooperatives and Rural Development (MAFCRD) and made up of government staff from MAFCRD and the Ministry of Livestock and Fisheries Industries (MLFI). Activities expanded to all 10 states during 2013 and 2014. Formal project activities finished in May 2015. The project was supervised by a Technical Committee made up of senior civil servants from all the ministries involved with oversight from the Inter-Ministerial Steering Committee; the ministries were MAFCRD as Chair, MLFI as Co-Chair and Ministry of Electricity, Dams, Irrigation and Water Resources (MEDIWR).

### **Objectives and activities of CAMP**

CAMP objectives<sup>1</sup> were to formulate the Comprehensive Agricultural Development Master Plan and strengthen the capacity of South Sudanese counterpart personnel during formulation. The project activities were laid out as:

- 1) Support the stakeholder consultation process
- 2) Situation Analysis of the Agriculture sector
- 3) Formulation of a framework for agricultural development and identification of priority areas
- 4) Formulation of investment plans; which include developed project profile sheets
- 5) Proposal of the implementation framework to materialise the Master Plan.

Throughout the CAMP process the activities were led by the South Sudanese Task Team, which was organised into 5 subsectors: crops, livestock, forestry, fisheries and institutional development. The 25 plus members have benefited from the stakeholder consultation process supported by the CAMP project and from the specialist advice provided by over 20 JICA contracted international expert consultants. The Task Team undertook a situation analysis of the agriculture sector, in the process making more than 50 extended trips to the 10 states of South Sudan, visiting over 50 counties. The findings of the field work and desk studies were consolidated into the Situation Analysis Report 2013/2015.

In the states, focal points were appointed to facilitate the work of the Task Team and act as links between CAMP and state administrations. Stakeholders were both informed and involved in the work and outputs of CAMP through regular meetings in Juba, and later on in the project, in the states, where the draft outputs were discussed in depth with the Task

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<sup>1</sup> Record of discussions on project for Comprehensive Agricultural Masterplan agreed between Japan International Cooperation Agency and authorities concerned of the Government of Republic of South Sudan. 14th June 2012 Juba.

Team. The process of capacity development has been the foundation of the CAMP process. 12 government staff members attended a training course conducted in Japan in July and August 2012, and all Task Team members benefited from field trips to other African countries in 2013 and 2014 to improve their exposure to their subsectors' activities in the region.

### ***Outputs***

CAMP has produced a series of major reports, starting with the Situation Analysis Report in draft form in late 2013 and continuing with a Development Options Analysis at the end of 2014, together with a State Profile compendium. A Livelihood Zone data book developed from data from the National Bureau of Statistics was produced in late 2013 and provided to stakeholders at a stakeholder meeting in 2014, as were all other relevant documents. The final investment plan is this document, together with its appendices and annexes, detailing the way forward in agricultural development until 2040. Internal reports to JICA and the Technical Committee established to oversee the project activities were also prepared regularly detailing project activities.

This Master Plan is complete; it is based on the findings of the Situation Analysis and other data collected and analysed during 2013 and 2014, and was prepared by the Task Team. CAMP has thus accomplished its original objectives.

### **The investment plan**

The investment plan is the final output of CAMP activities and is based on the latest and most accurate data on the agriculture sector in South Sudan, obtained from the situation analysis and the other baseline reports produced by CAMP. The immense value of the data collected and analysed by CAMP and presented as Annexes to this report cannot be overemphasised.

Using the firm foundation of accurate and up to date knowledge collected by the Task Team, CAMP has analysed the subsectors, identifying opportunities, constraints and likely development paths; it has also produced over 110 indicative subsector project profiles to guide decision makers in identifying how to address the various impediments to development. The components of the project profiles are very detailed and give, among other things, the necessary activities, human resource requirements and an indicative budget for all major interventions considered by the CAMP team as necessary to take advantage of the opportunities presented in the agriculture sector. These project profiles form a major part of the investment plan and should be seen as a convenient way to present project components and activities, rather than a rigid fixed format for implementation.

### ***Opportunities identified***

The immense potential for agriculture in South Sudan cannot be over emphasised. South Sudan has millions of hectares of prime rangeland for grazing livestock; abundant rainfall and fertile soils for growing vegetables, tropical fruits, and a myriad of crops; large forest plantations and an abundance of fish from the Sudd and Nile River and the many other fresh water rivers and lakes. Many opportunities exist for increasing agricultural production and productivity across all four agriculture subsectors examined by CAMP (crops, livestock, forestry, and fisheries). The scope and size of these opportunities vary considerably between subsectors, and they are described in the CAMP documentation. The required actions for the Government of the Republic of South Sudan and the private sector to take advantage of these opportunities are elaborated in detail in the project profiles, which include activities under Institutional Development, a subsector that supports the other four subsectors.

### ***Agriculture contribution to GDP***

The economic circumstances of the GRSS are examined in depth, so as to understand financing constraints and the relative importance of the various subsectors to the whole economy. Due to declining oil revenues, GDP will reduce in the short to medium term, but the effects of this decline can be reversed over the long term by increasing the contribution to the economy made by other sectors, especially agriculture. Agriculture should be a major foundation of increased economic activity in the future. It is also assumed that the funding available to the GRSS will follow the changes in GDP; and that what the government is able to offer the agriculture sector will closely follow the GDP. CAMP offers three scenarios for further GDP growth, 1) business as usual, 2) economic growth with more emphasis on the agriculture sector and 3) a "peace dividend", where reductions in security costs are funnelled to agriculture.

### ***Major constraints***

To take advantage of the many opportunities the GRSS will have to take a series of important measures to address the numerous cross cutting constraints to the development of the agriculture sector. These include, but are not limited to, corruption, poor transport and other infrastructure, poor communications and a generalised lack of capacity within the numerous institutions tasked with assisting the development of the agriculture sector, at both national and state levels. Without serious efforts to overcome these cross cutting constraints agriculture will not be able to achieve its potential as a major driving force towards prosperity as the revenue from oil declines.

Each individual subsector has particular constraints unique to it and these are fully elaborated in the various documents that make up this report, and in particular the project profiles. A significant proportion of the subsector constraints also require GRSS action, since they relate to functions of government that since independence have not been fully established. Many relate to the control and scrutiny of the private sector's activities, and disease control and bio-security for crops, livestock, forestry and fisheries.

### ***Private sector involvement in agricultural development.***

The private sector should be the engine of growth but the Situation Analysis and Master Plan show that it is generally unprepared to take the necessary steps due to a poor enabling environment and lack of investment finance. In all subsectors the private sector is already active, but needs encouragement and impediments to operations and investment removed. Action from the government is required to create conditions attractive to the private sector. Examples include strengthening the legal framework throughout all subsectors, land reform and addressing the major cross-cutting issues mentioned above. Monitoring and control of the private sector's activities is also necessary to curtail excesses and dubious practices.

## **Implementation**

Production of the Master Plan, illuminating and well researched as it is, does not mean the end of CAMP. The Government of South Sudan, through the inclusive nature of the process, has committed itself to CAMP and its outcomes as detailed in the Master Plan. It is necessary now to work with all development partners towards implementation of the components of the project profiles produced by CAMP in order to guide investment and progress towards agricultural transformation up to the year 2040. The CAMP Master Plan could be considered as a "road map" for the future of agriculture in South Sudan. If followed, this road map will guide all the agriculture sectors for the next 25 years towards prosperity, sustainability, and self-reliance.



# **1. Agriculture sector development policy and implementation framework**

## **1.1 National development policies and planning frameworks**

The Comprehensive Agricultural Development Master Plan (CAMP) is the investment plan developed to align with national development policies and objectives; and with the policies and strategies of the Ministry of Agriculture, Forestry, Cooperatives and Rural Development (MAFCRD), Ministry of Livestock and Fisheries Industries (MLFI), and Ministry of Electricity, Dams, Irrigation and Water Resources (MEDIWR). CAMP was devised to achieve national and sectoral visions, policy and development objectives over the period 2015/16-2039/40.

CAMP is also the investment plan under the framework of the Comprehensive Africa Agriculture Development Programme (CAADP) of the African Union to achieve continental and regional agricultural development objectives.

### **1.1.1 National vision, policy and development objectives**

The national development vision, goals, strategy and targets in relation to agriculture are articulated under the economic and social development pillars in the South Sudan Development Plan 2011-13 (SSDP)<sup>2</sup>; and, its implementation framework, the South Sudan Development Initiative 2013-20 (SSDI).<sup>3</sup>

The Vision 2040 (the Vision) of the Government of the Republic of South Sudan (GRSS) drives the long term development direction of the country. The SSDP was developed to realise the Vision 2040, which is:

*To build an exemplary nation: a nation that is educated and informed; prosperous, productive and innovative; compassionate and tolerant; free, just and peaceful; democratic and accountable; safe, secure and healthy; united and proud.*

Four development pillars were identified in the SSDP to support and work towards the Vision: 1) good governance, 2) economic development, 3) social and human development and 4) conflict prevention and security.

Programmes areas, for the three core ministries involved in CAMP, directly address the second pillar. In a cross-cutting manner, CAMP addresses and contributes to the first, third and fourth pillars respectively by: improving institutional capacity; increasing opportunities for employment and income through agricultural production and productivity improvement; and, streamlining of policies, regulations and procedures in management and utilisation of natural resources. This will lead to an enhanced quality of life and overall prosperity countrywide.

### **1.1.2 Agriculture sector policies and development objectives**

The vision and mission for the agriculture sector are defined in the Agriculture Sector Policy Framework (ASPF): 2012-2017.<sup>4</sup> The South Sudan Agriculture Sector Investment Plan 2013 (ASIP) is the implementation framework for the ASPF and is part of SSDI. CAMP's primary focus is to achieve this vision:

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<sup>2</sup> Annex IV. Situation Analysis Report 2013/2015. Chapter 4.1.

<sup>3</sup> Source: Government of Republic South Sudan. 2013. *South Sudan Development Initiative 2013-20*. Juba: GRSS. (Partially modified by the CAMP Task Team).

<sup>4</sup> Annex IV. Situation Analysis Report 2013/2015. Chapter 4.2.

*Food security for all the people of the Republic of South Sudan, enjoying improved quality of life and environment.*

ASIP also defined immediate agricultural development objectives and guiding principles for public intervention, which were used as guides for the development of CAMP.

Immediate agricultural development objectives:

- Accelerate community resettlement, rehabilitation, peace and security as a post-war recovery process
- Enhance intensification and sustainable pro-poor growth in agricultural productivity and production
- Strengthen institutional capacity for sustainable agricultural development
- Accelerate development and commercialization of strategic commodity value chains
- Ensure sustainable utilization and management of land, water and natural resources.

Guiding principles for public intervention:

- Decentralization of public service delivery
- Empowerment of rural communities through participatory planning and implementation
- Pluralistic approach in which agricultural innovations and extension services are derived from several sources
- Cooperatives and farming groups enhance cost effective ways of reaching and interacting with people in sparsely populated areas
- Promotion of value addition and establishment of agro-processing industries
- Strengthen rural infrastructure (roads, electricity and water)
- Macro-economic stability to achieve low inflation, stable exchange rates and favourable trade and market environment
- Conducive marketing policies to ensure private sector investment
- Promotion of public-private partnerships to complement government efforts in offering critical services to agriculture
- Development management to ensure sustainable conservation and utilisation of natural resources.

Similarly, the vision and mission of the MLFI are given in the Policy Framework and Strategic Plans 2012-2016<sup>5</sup> and CAMP is consistent with this vision:

*Productive livestock and fisheries sectors contributing 5% annually to improvement in food security, household income, job creation and the national Gross Domestic Product.*

## **1.2 Framework of Comprehensive Agricultural Development Master Plan**

The CAMP framework includes the Comprehensive Agricultural Development Master Plan (CAMP) and the Irrigation Development Master Plan (IDMP). It consists of three elements: (1) definition of concepts and approach to development planning, (2) investment plans for CAMP and IDMP, and (3) implementation mechanism. The implementation of both CAMP and IDMP will use a coordinated, dynamic and adaptive approach subject to periodic review and improvement. The CAMP framework not only provides initial investment plans with a set of proposed projects and programmes and their justifications aligned to the expected agricultural development path, but also provides for a coordination structure, continuous monitoring and evaluation to adjust implementation as necessary.

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<sup>5</sup> Annex IV. Situation Analysis Report 2013/2015. Chapter 4.2.



## **1.2.1 Irrigation Development Master Plan**

### **1.2.1.1 Description**

Achieving the agricultural development objectives in all subsectors requires the provision and management of water. Hence, in support of agricultural production and productivity and in parallel to CAMP, an Irrigation Development Master Plan (IDMP) is being prepared by MEDIWR, in collaboration with MAFCRD and MLFI. In association with CAMP, IDMP will continuously provide information on hydrometeorology, topography, land use and other engineering aspects pertaining to water control and delivery infrastructure to those CAMP projects that require the provision and management of water.

To realise sustainable irrigation development in the country, IDMP comprises of three elements: 1) policy, legal and regulatory framework; 2) institutional and capacity development; and 3) irrigation facilities development and management. To address existing challenges and make use of available opportunities in a strategic manner, IDMP adopted a pragmatic approach. A number of programmes, with their identified components, projects and activities have been prepared in line with the three elements including: 1) formulation of irrigation development guidelines and private sector irrigation investment promotion; 2) human resource and institutional development for irrigated agriculture and irrigated agriculture extension;; and, 3) irrigation scheme development at the national, state, county and community levels and establishment of an information network system.

The IDMP report identifies programmes and their justification. Projects under the programmes were identified based on submission by states, counties and communities, and regional organisations.

### **1.2.1.2 Linkages with CAMP**

CAMP and IDMP are linked in that:

1. Although the IDMP report is published separately, and the structure of the report is different from the CAMP report, both CAMP and IDMP are to be implemented within the framework of CAMP. CAMP and IDMP will share an implementation mechanism – the CAMP/IDMP implementation mechanism.
2. For CAMP projects or IDMP programmes that need the provision and management of water, project execution, costs of water works, operations and maintenance, human resource allocation etc. will be found in IDMP. This will be reflected in project annual work plans and budgets, and sector plans.

This document describes the shared CAMP/IDMP implementation mechanism with particular reference to the CAMP/IDMP implementation coordination structure. It is primarily written as a CAMP implementation document. However, several of the concepts, tools etc. developed in chapter 4 and Annex II (CAMP Implementation) will be of use and shared during IDMP implementation.

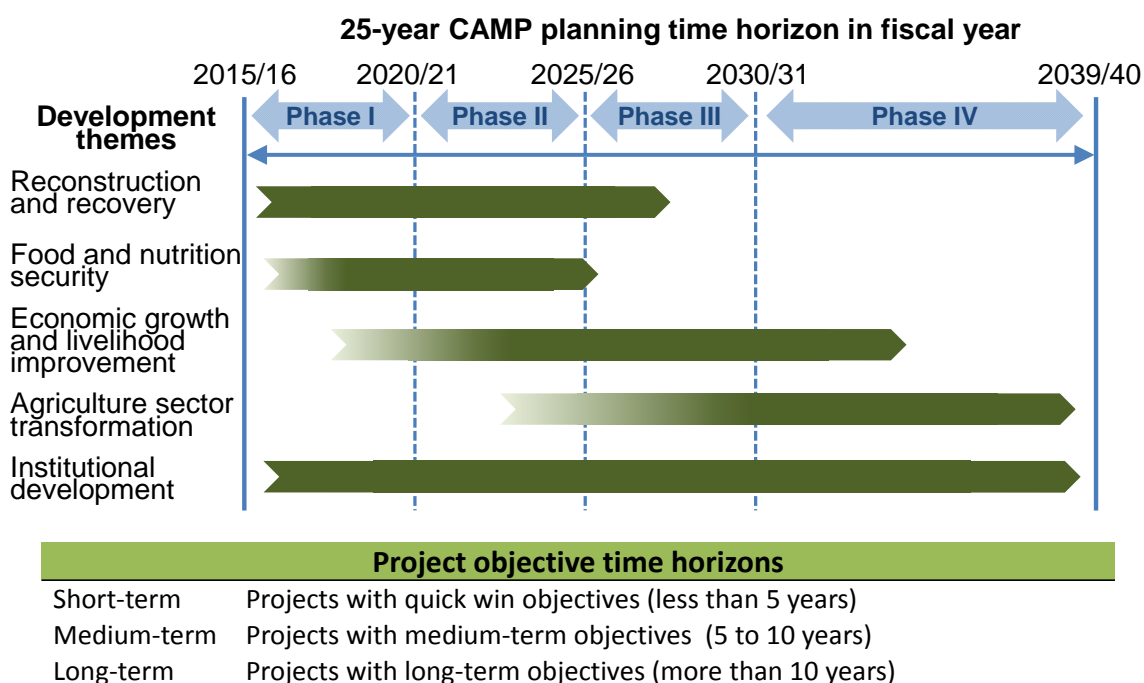
## **1.2.2 Definition of concepts and approach to development planning**

The first element of the CAMP framework includes the definition and justification of (1) development themes, (2) livelihood zone approach, (3) investment planning space and project profiles, (4) GDP growth and funding availability forecasts, and (5) integration of the current strategies and investment plans. These concepts are used in later chapters.

### 1.2.2.1 Development themes

The CAMP development themes represent the expected development path of the agriculture sector. By establishing explicit linkages between project objectives and development themes, it is possible to prioritise and sequence implementation of the large number of projects proposed in the CAMP investment plan. The 25-year period of CAMP and IDMP implementation, starting from fiscal year 2015/16 and ending in fiscal year 2039/40, is sufficiently long so as to expect structural changes in the agriculture sector. During this period it is expected that the sector will transform from subsistence agriculture to commercial, industrial and sustainable agriculture as a result of production and productivity improvements, and that asset and capital accumulation will be used for welfare gains and further investment in the sector. It is also expected that the country will resolve its internal conflicts and insecurity. Thus, the CAMP development themes represent the expected stages of agricultural development starting with recovery from conflict. However, the stages are closely interlinked and can occur concurrently.

**Figure 1-1 Development themes, planning and project objective time horizons**



Source: CAMP TT

Figure 1-1 shows the development themes and associated terms such as planning and objective time horizons which are described below.

#### **Twenty-five year planning time horizon**

Four phases are defined:

- Phase I 5 years from fiscal year 2015/16 to 2019/20
- Phase II 5 years from fiscal year 2020/21 to 2024/25
- Phase III 5 years from fiscal year 2025/26 to 2029/30
- Phase IV 10 years from fiscal year 2030/31 to 2039/40

Phase IV is for 10 years as planning becomes less certain over time.

### ***Project objective time horizon***

Project objective time horizons refer to the length of time necessary to achieve project objectives.

- Short-term project      A project with short-term and quick win objectives to be achieved in less than 5 years
- Medium-term project    A project with medium-term objectives to be achieved within 5 to 10 years
- Long-term project        A project with long-term objectives to be achieved over more than 10 years

The project objective time horizon should not be confused with the planning time horizon which refers to a specific phase during the CAMP/IDMP implementation period.

The development themes are: 1) reconstruction and recovery, 2) food and nutrition security, 3) economic growth and livelihood improvement, 4) agriculture sector transformation, and the crosscutting theme of 5) institutional development.

### ***Reconstruction and recovery***

The development theme of reconstruction and recovery is to be addressed from phase I to phase III. Due to the long lasting historical and sociocultural root causes of conflict and insecurity that led to the underdevelopment in the sector, it should be expected that a relatively long time period will be needed to address them in order to promote agricultural development. Reconstruction and recovery from internal conflict, insecurity and lack of innovation is a prerequisite for considering support to production and market activities, particularly in the most affected areas. Conflicts over natural resources use will be mitigated through the promotion of agricultural development. Trust between the economic players and government will be restored in order to reduce social and economic transaction costs. Law and order must be restored through strengthening legal frameworks and their enforcement. Government's impartial conflict mitigation, supervision, and regulatory functions will be strengthened.

### ***Food and nutrition security***

The development theme of food and nutrition security is also high priority and will be addressed during the early stages of CAMP implementation in phases I and II. After resolving the emergency food insecurity situation, it is expected that food and nutrition security must be achieved by agricultural development interventions aiming to improve the resilience of vulnerable populations. Since most farmers (defined here to include herders and fishermen/women) participate in the market economy to some degree, it is expected that an improvement in agricultural production and productivity will result in increased household cash income which will contribute to increasing their asset base and hence resilience. Promotion of a cash based economy and a rural agricultural labour market will significantly increase farmers' options to generate income for asset development and investment for production. This will bring about the transition into the economic growth and livelihood improvement development themes.

### ***Economic growth and livelihood improvement***

The food and nutrition security development theme focuses on support to subsistence farmers, whereas this development theme focuses on support to small commercial farmers or farmers in the transition from subsistence to commercial farming. Input and output activities, plus import and export markets, will be addressed with the aim of increasing the supply and demand of agricultural goods. Phases II and III, and half of phase IV will focus on this development theme. It is expected that the government will be financially constrained, but that it will have to consider both the large unused labour force in rural areas and the gradual process of commercialisation of subsistence production. By addressing this theme, capital accumulation and a favourable investment environment will be achieved. This will

trigger agriculture sector transformation, where capital intensive, large scale commercial agriculture, processing and trading businesses will become drivers of agricultural development.

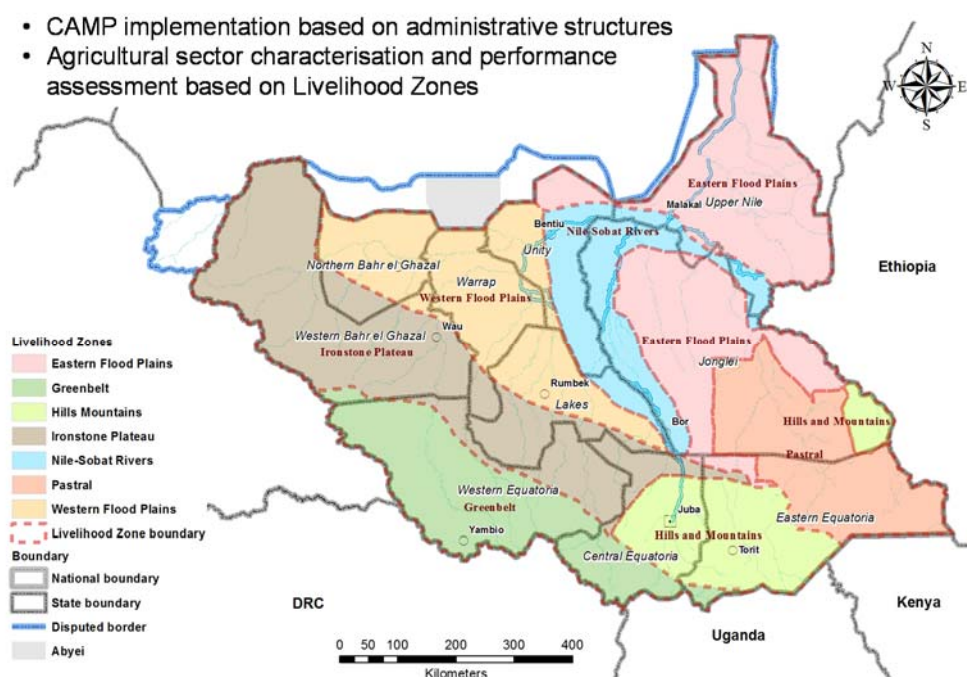
### **Agriculture sector transformation**

The agriculture sector transformation is expected to commence in phase III and continue during phase IV. Further increase in value added to agricultural outputs, both processed and unprocessed, will be achieved. Outputs will be competitive both in international and regional markets, while domestically allowing import substitution. As happened in other countries, capital accumulated in the agriculture sector and other direct foreign investment will eventually establish non-agricultural manufacturing and service sector businesses. This, plus the shift of labour from the rural to urban sector due to industrialisation of the agriculture sector, will allow further improvements in labour productivity. At the same time a wider spectrum of values will be recognised by the market. Particularly, for example, recognition of the values associated with environmental services and social justice will open opportunities for businesses in conventional tourism, ecotourism, carbon trading and biological energy.

### **Institutional development**

Institutional development is primarily for the public sector to address its low service delivery capacity, particularly in the CAMP implementing ministries. Without efficient and effective public service delivery, no development objectives set with respect to the other development themes can be achieved. The public sector in South Sudan is in its early stage of development, and so all four phases include institutional development. Many projects, across all subsectors, are proposed to improve all aspects of institutional capacity. To mobilise external and internal financial resources for CAMP implementation, an accountable and trusted public financial management system and legal and regulatory framework must be in place. To restore the trust between the public and private sector actors, corruption and illegal practices must be eliminated. Fair and merit based human resource management needs to be implemented to allow for optimal public service delivery.

**Figure 1-2: Livelihood zones approach**



Source: Annex IV. Situation Analysis Report 2013/2015. Section 2.4, Figure 2-8

### 1.2.2.2 Livelihood zone approach for monitoring and evaluation

Livelihood zones (Figure 1-2) were identified to characterise the production practices and livelihoods of rural areas across the country.<sup>6</sup> Since livelihood zones indicate the types of agricultural production systems, which in turn reflect the physical and socioeconomic conditions, better analysis can be achieved using livelihood zones rather than administratively defined areas. For this reason CAMP was developed using analysis by livelihood zone. Similarly, the outcomes and impact of CAMP implementation should be monitored and evaluated by livelihood zone. CAMP will be implemented across national, state and local government boundaries, and selection of project sites will be based on these boundaries. Therefore, performance monitoring and evaluation will be designed to capture livelihood zone impacts within the administrative boundaries concerned.

### 1.2.2.3 Ownership of projects

The CAMP investment plan, together with its proposed projects, is jointly owned by national, state and local governments, development partners, local communities and other relevant stakeholders. Once projects are selected for implementation, ownership and implementation authority will be determined in accordance with the policy of decentralisation and devolved public service delivery, so as to ensure efficient and effective implementation. In pursuing decentralisation, caution and pragmatism will be exercised, given the particularly weak capacity at state and local government levels. Appropriate support will be given when significant implementation and financial responsibilities are transferred.

Table 1-1 shows the seven possible types of project ownership. It also shows who is responsible for planning, financing, supervising, implementing and monitoring and evaluation for each type.

**Table 1-1: Types of project ownership**

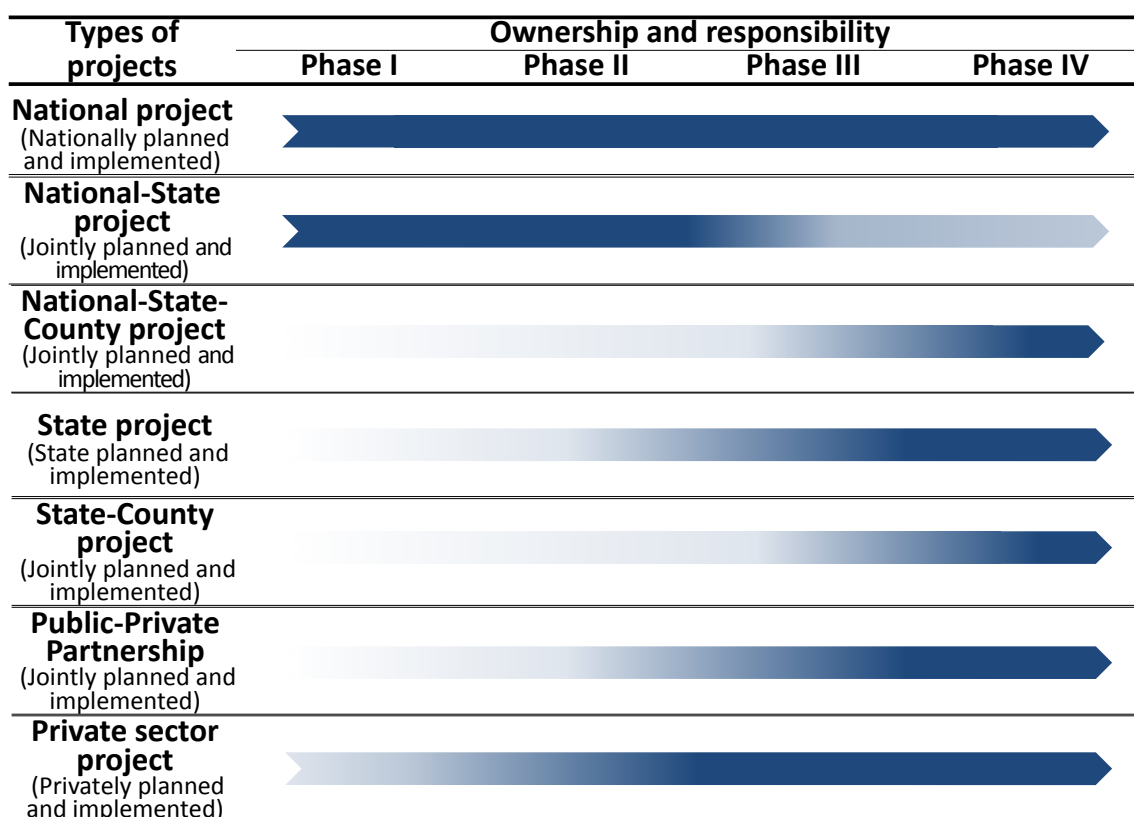
Types of projects	Ownership and responsibility			
	National government	State governments	County governments	Private sector
<b>National project</b> (Nationally planned and implemented)	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Implementation</li> <li>• M&amp;E</li> </ul>			
<b>National-State project</b> (Jointly planned and implemented)	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Supervision</li> <li>• M&amp;E</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Implementation</li> <li>• M&amp;E</li> </ul>		
<b>National-State-County project</b> (Jointly planned and implemented)	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Supervision</li> <li>• M&amp;E</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Implementation</li> <li>• M&amp;E</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Implementation</li> <li>• M&amp;E</li> </ul>	
<b>State project</b> (State planned and implemented)		<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Implementation</li> <li>• M&amp;E</li> </ul>		
<b>State-County project</b> (Jointly planned and implemented)		<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Supervision</li> <li>• M&amp;E</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Implementation</li> <li>• M&amp;E</li> </ul>	
<b>Public-Private Partnership</b> (Jointly planned and implemented)	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Supervision</li> <li>• M&amp;E</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Supervision</li> <li>• M&amp;E</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Supervision</li> <li>• M&amp;E</li> </ul>	<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Implementation</li> <li>• M&amp;E</li> </ul>
<b>Private sector project</b> (Privately planned and implemented)	(Regulation) (Subsidy) (Lending) (Equity financing)	(Regulation) (Subsidy) (Lending) (Equity financing)		<ul style="list-style-type: none"> <li>• Planning</li> <li>• Financing</li> <li>• Production</li> <li>• M&amp;E</li> </ul>

Source: CAMP TT

<sup>6</sup> Annex IV. Situation Analysis Report 2013/2015. Section 2.4, Table 10-13.

The expected implementation timings of these seven types of projects are indicated in Figure 1-3. National projects will be implemented throughout the CAMP implementation period due to the leading role of the national government and the necessity for regular and continuous capacity development. As national-state projects are implemented, state capacity will be developed, particularly during phases I and II. Once sufficient state and county capacity is developed, implementation of national-state-county projects, state projects and state-county projects will build up in phases III and IV. As the capacity of government and private sector businesses increases, public-private partnership projects will gradually be implemented during phases III and IV. Private sector projects are expected to gradually begin in phase I and gain momentum in phases II through IV.

**Figure 1-3: Timing of project implementation by ownership types**



Source: CAMP TT

#### 1.2.2.4 Financial resource constraints

To develop CAMP as a realistic master plan, prioritisation and sequencing of the proposed projects should be done by considering likely funding availability scenarios, particularly of the public sector but also development partners. The amount of public sector contribution to CAMP implementation identified in the national budget will be a function of political and policy decision-making, and the total national and state revenues available for disbursement. Since total revenue available will be dependent on economic growth scenarios, a 25-year macroeconomic development scenario was proposed and is shown in Figure 1-4.<sup>7</sup> Based on this scenario, three funding availability scenarios are developed in section 3.2 using different

<sup>7</sup> Annex III. Development Options Analysis 2014. Section 5.

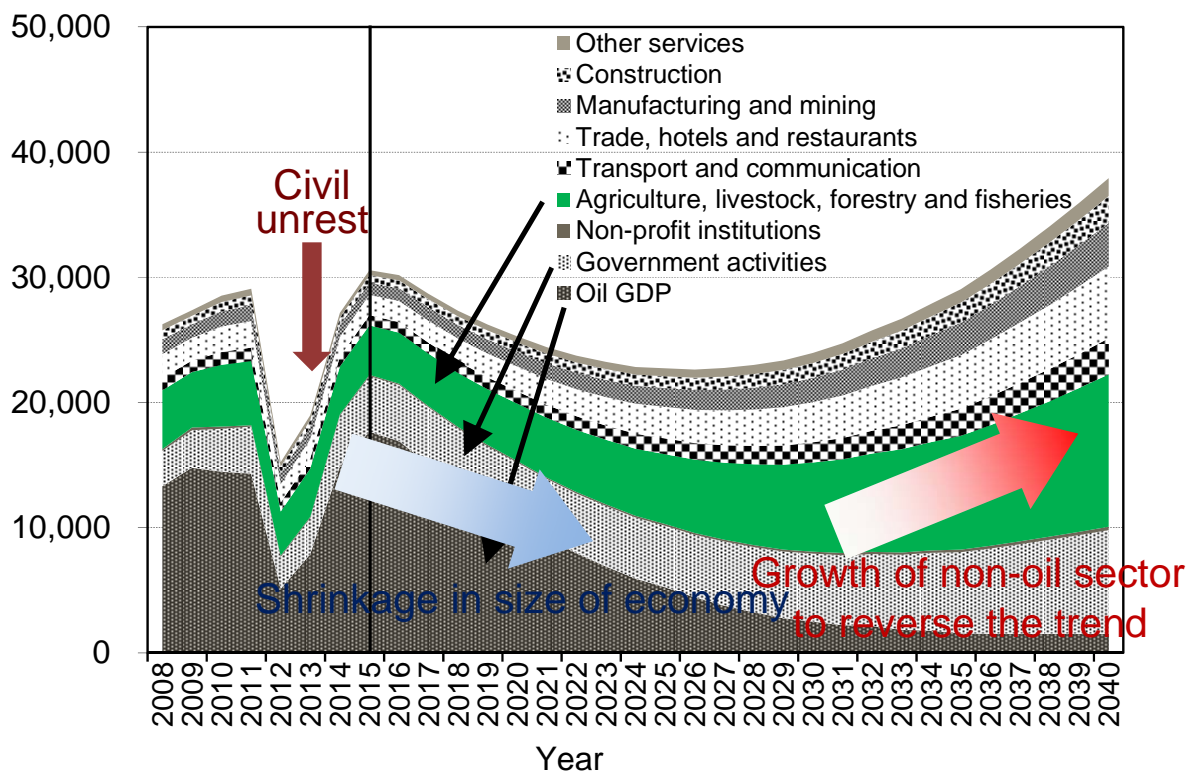
political and policy decision-making variables. These scenarios are used to prioritise and sequence the proposed projects. During the CAMP period these funding availability scenarios will be subject to periodic review. Based on these reviews and implementation performance reviews, CAMP's investment plan will be adjusted as necessary.

As indicated in Figure 1-4 the projected GDP growth is strongly influenced by the growth forecast of the oil sector which is currently expected to shrink significantly during CAMP implementation. For this decline to be compensated for by the growth of non-oil sectors, revenues and economic benefits derived from the oil sector must be invested for the development of the agriculture and other non-oil sectors rather than used for the consumption of imported goods and export of capital. The declining GDP forecast will lead to declining government revenues, placing the following constraints on CAMP implementation:

- Constant or shrinking number of government employees
- Constant or shrinking size government budgets.

**Figure 1-4: Projected GDP growth as a constraint of investment plan development**

Million SSP at 2009 constant price

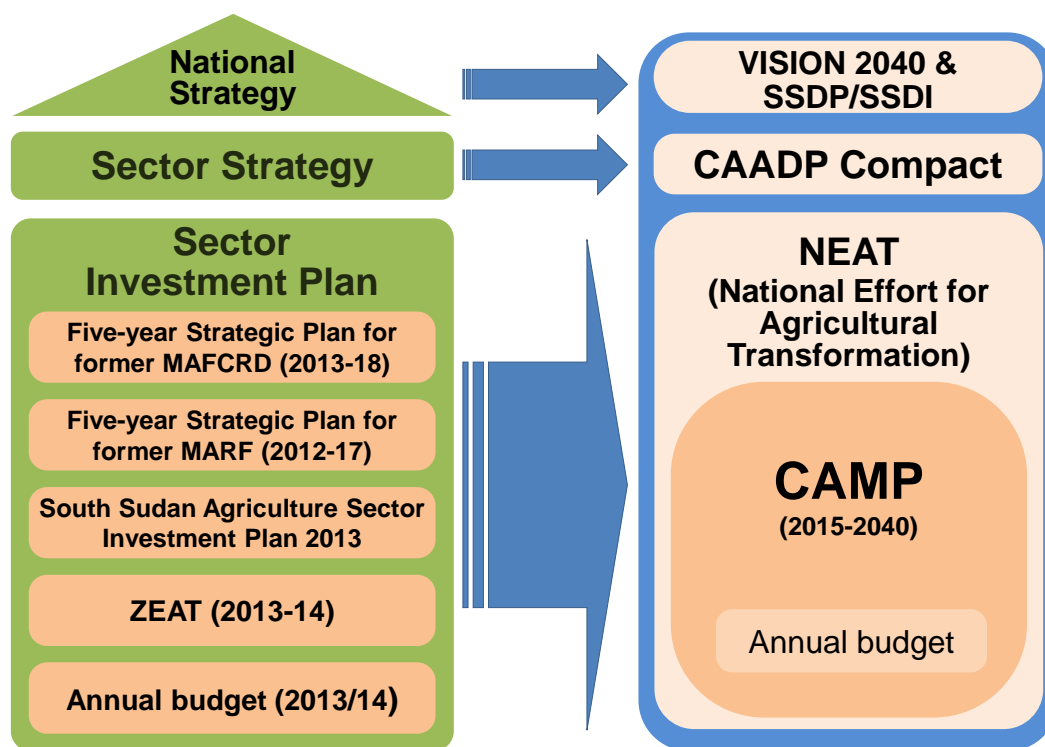


Source: NBS, IMF, AfDB, FAO and CAMP TT

#### 1.2.2.5 Integration of the current strategies

As shown in Figure 1-5 the government has integrated various agriculture sector investment plans and strategies developed by the CAMP implementing ministries into CAMP. CAMP is considered as the long-term agriculture sector investment plan that will implement the Vision 2040 and SSDP/SSDI as well as the Comprehensive Africa Agriculture Development Programme (CAADP).

**Figure 1-5: Integration of the agriculture sector investment plans and strategies**



Source: CAMP TT

### **1.2.3 Investment plans**

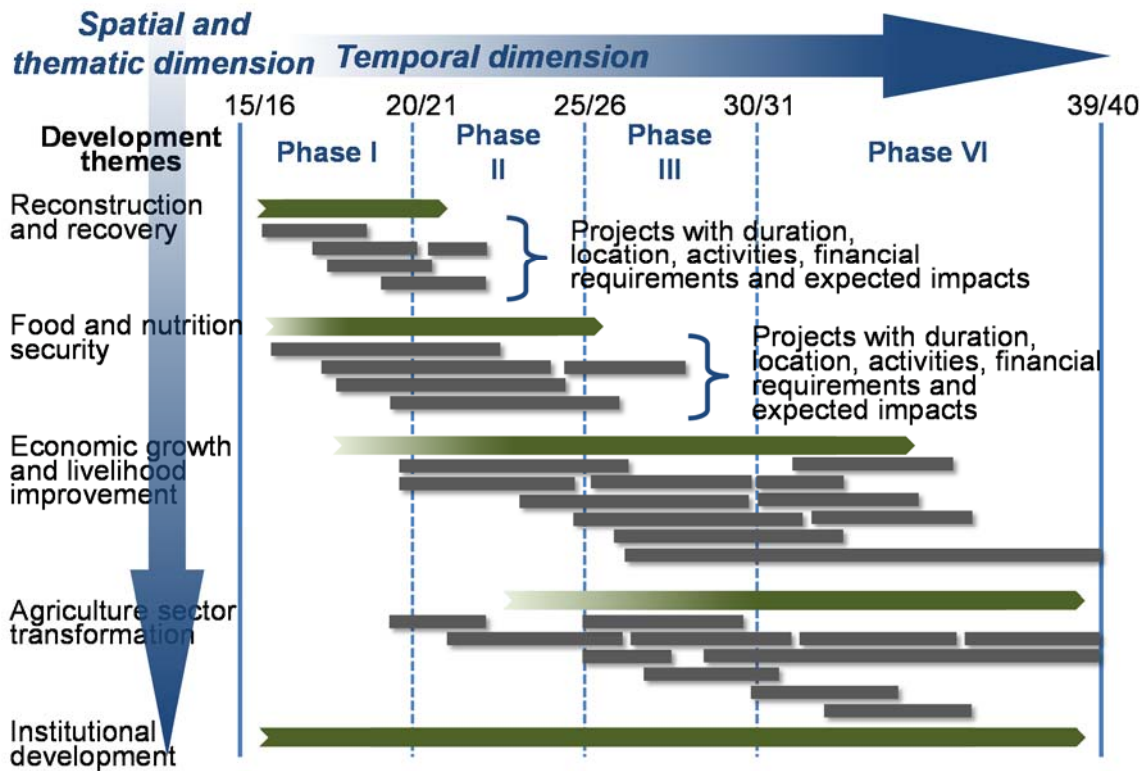
Both CAMP and IDMP have an investment plan. The CAMP investment plan is a set of proposed projects; the IDMP investment plan is a set of proposed programmes. In the CAMP framework "project" refers to either a project of CAMP or a programme of IDMP. Both will incorporate on-going and pipeline projects, organised in a way so that their justifications, priorities and sequencing are consistent with the expected path of agriculture sector development and assumed financial resources available for their implementation. The CAMP investment plan is found in Annex I of the CAMP document where linkages between development themes and proposed projects, and sequencing and costings of the projects are summarised as an investment planning space (IPS). Each project is described in a project profile format with clear identification of ownership, justification, component descriptions, location, expected impacts and costings. Since CAMP employs a dynamic and adaptive management approach, the performance of the investment plan implementation will be monitored and evaluated periodically. Based on such performance reviews, the investment plan will be adjusted to reflect the current situation and future prospects regarding projects and resource allocation.

#### **1.2.3.1 Investment planning space**

Proposed projects are placed in the form of an investment planning space (IPS); this concept is presented in Figure 1-6. An IPS is developed for each subsector to record sequencing, duration and financial resource requirements of its projects. Projects are firstly classified by development theme. However, the structure is flexible so that an IPS is able to accommodate different classification schemes as decided by the government in consultation with all stakeholders, including development partners (DPs). The timeline will be adjusted as circumstances change, in particular the funding and human resource availability.



Figure 1-6: Investment planning space (IPS)



Source: CAMP TT

### 1.2.3.2 Project profiles

From the Situation Analysis Report 2013/2015 (Annex IV) and the Development Options Analysis 2014 (Annex III), the various development activities necessary for agricultural development over the next 25 years have been identified. Project profiles, as presented in Annex I, are a convenient way to present these activities; the components and activities show the various inputs needed to achieve the objectives listed and expected outputs.

The government, development partners and other relevant stakeholders could choose to fund or implement all the activities in a project profile, in other words the project profile in its entirety becomes a project to be implemented at one time. However, donors may choose only some components and activities from a profile, and could even add some from another profile (mix and match), to create a project to fund or implement. This may well be the case if they wish to fund a project in a specific location with components and activities derived from several profiles, or covering a location with cross-sectoral objectives, such as a generalised livelihoods or health programme. Some of the projects profiles presented cannot realistically be implemented by several donors or in disparate locations. An example of this is the establishment of an Aquaculture Centre in the Green Belt Livelihood Zone, which can only be in one location.

Project profiles should not therefore be seen as rigid plans covering specific development components and activities, but rather as a guide to what needs to be done, and a proposal for action based on the best available information and practice. Great flexibility in implementation of the project profiles is important.

The structure of a project profile is shown in Table 1-2. All CAMP project profiles are justified by their contribution to the achievement of development themes; effectiveness to take advantage of opportunities; and efficiency to overcome identified challenges and constraints. Profiles provide descriptions and costings, and are subject to modification based on periodic reviews of the investment plan, financial resources and development needs. Costs and resource availability are used to determine sequencing.

**Table 1-2: Structure of project profile**

Parts and sections of Project Profile
Part 1: Project profile administration
1.1 Project identification
1.2 Project characteristics: (to be selected from Tables in Reference)
1.3 Project characteristics: (to be selected from the items)
Part 2: Project description
2.1 Project justification, objectives, overall description and component structure
2.2 Detailed description of project component, activity and outputs
2.3 Service providers and beneficiaries
2.4 Outcomes, impact and contributions to value added (i.e. economic growth)
2.5 Environmental and social impact, and mitigation measures
2.6 Monitoring and evaluation for impact measurement
2.7 Required human resources
2.8 Risk assessment with respect to project objectives and resources to be applied
2.9 Other special considerations and/or notes
2.10 Routine operation and required resources after the completion of the project
Part 3: Cost estimation (Detailed cost estimation based on national budget accounting items)

Source: CAMP TT

### **1.2.4 CAMP/IDMP implementation mechanism**

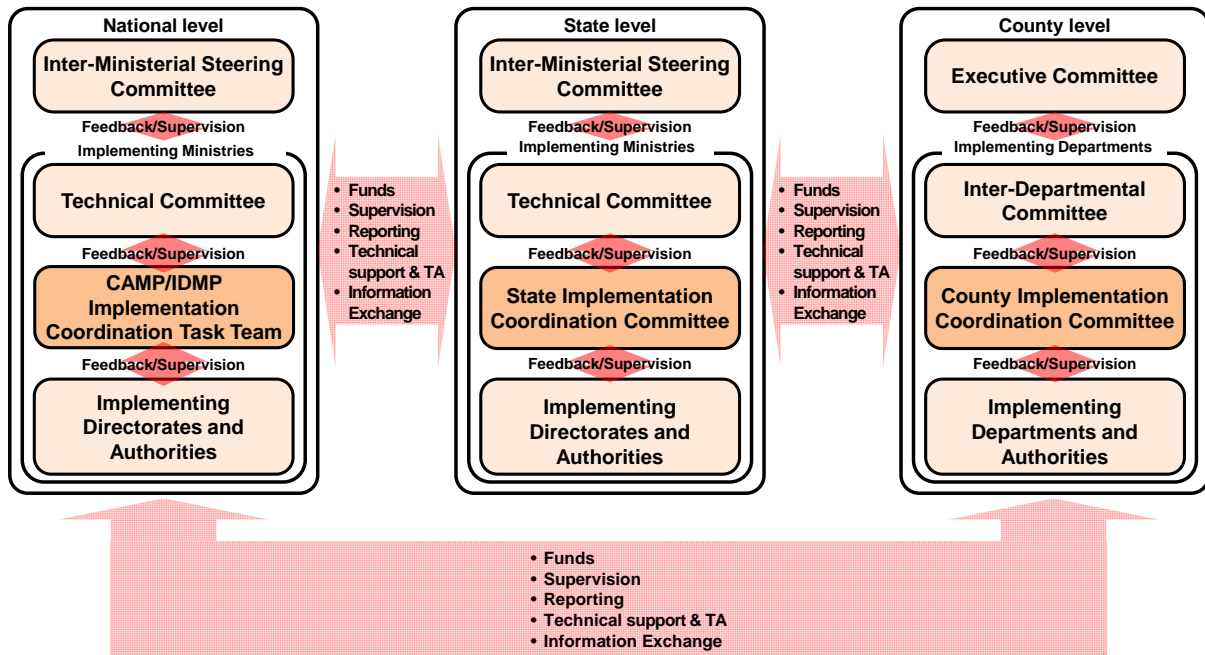
CAMP/IDMP implementation will be overseen by the government through use of its systems, functions and procedures that will be used and enhanced wherever necessary, to ensure an efficient and effective achievement of the envisaged outcomes. The implementation mechanism to be used by the CAMP and IDMP implementing ministries (MAFCRD, MLFI, MEDIWR, and their affiliated public institutions in the national, state and local governments) will allow adaptive management of both CAMP and IDMP implementation with an emphasis on results and performance monitoring in all aspects of operational, financial and human resource management.

Core elements of the CAMP/IDMP implementation mechanism are 1) CAMP/IDMP implementation coordination structure (CAMP/IDMP ICS), and 2) public financial management system (PFMS).

#### **1.2.4.1 CAMP/IDMP implementation coordination structure**

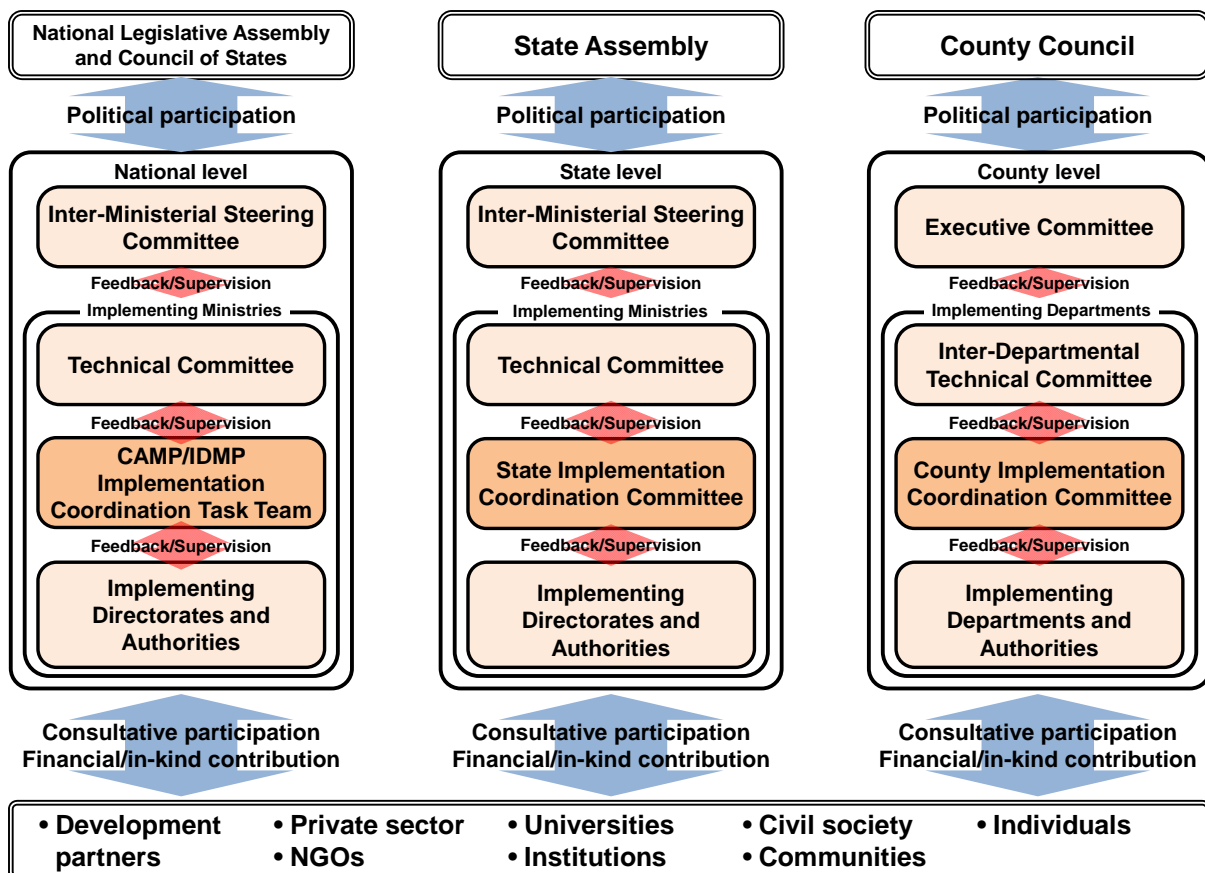
Figure 1-7 shows a schematic representation of the CAMP/IDMP implementation coordination structure (CAMP/IDMP ICS). A national implementation coordination task team and state and county implementation coordination committees will be established. They will be responsible for the overall management of implementation at national, state and local government levels. They also lead and facilitate the mobilisation of internal and external investment resources. They coordinate, supervise and monitor, and share funds, information and technical assistance to implement national, national-state, state, state-county and national-state-county projects. National and state Inter-Ministerial Steering Committees and county Executive Committees have overall responsibility for implementation.

**Figure 1-7: CAMP/IDMP implementation coordination structure**



Source: CAMP TT

**Figure 1-8: Three types of stakeholder participation**



Source: CAMP TT

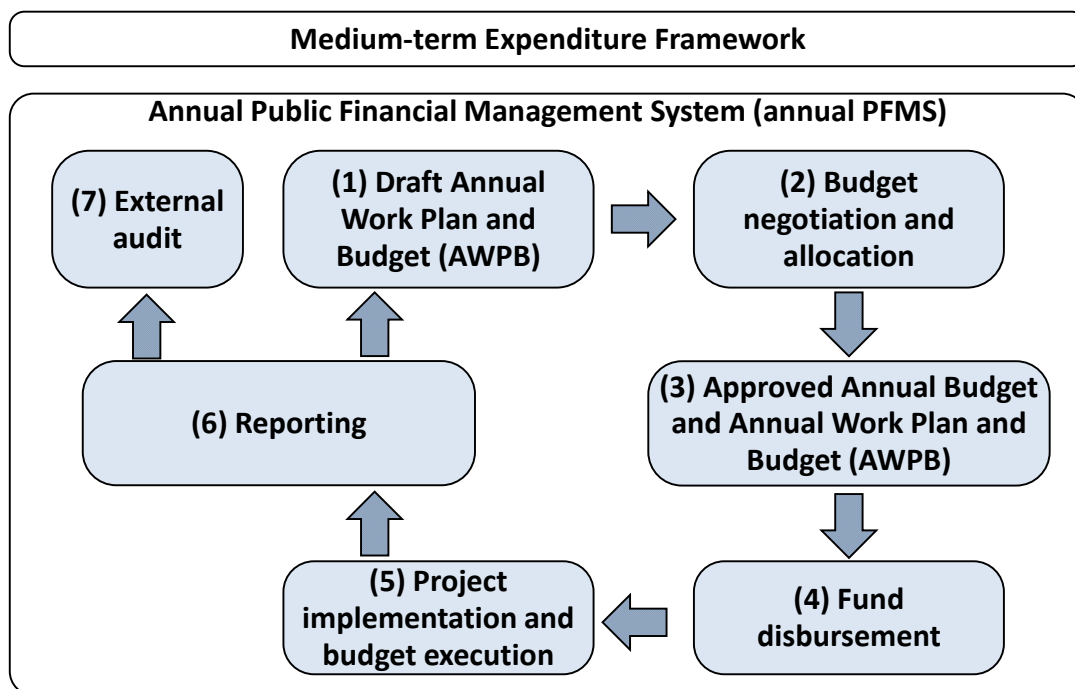
### Stakeholder participation

Participation by stakeholders at the critical stages of planning, resource allocation decision-making, execution, monitoring and evaluation is necessary to secure a transparent and accountable implementation of CAMP and IDMP. The CAMP/IDMP ICS will promote well-managed stakeholder participation; this builds mutual trust between the various players. Three types of stakeholder participation (Figure 1-8) are defined: 1) political participation through the legislative process, 2) consultative participation through arrangements such as public hearings, stakeholder meetings and workshops, and 3) participation by monetary or in-kind contributions, for example, financial support from development partners and labour contribution by rural communities to infrastructure development. The decision-making process is initiated by the executive arm of government and approved by the legislature as ultimate authority. Political participation is critical during approval of national, state and county budgets, related legislation and reports concerning monitoring and evaluation, and auditing.

#### 1.2.4.2 Public financial management system

The public financial management system (PFMS) is shown in Figure 1-9, which is the set of procedures (paper and computerised) necessary to perform public financial management (PFM); this is where annual resource allocations and their execution are managed. The government places a very high priority on improving the use of the PFMS by national, state and county governments. This will be a prerequisite for successful implementation of CAMP and IDMP. The PFMS employs the national annual budget (NAB), state annual budget (SAB) and county annual budget (CAB), and annual work plan and budget (AWPB) as major tools for operational and financial management; they will be used as coordination and management tools during both CAMP and IDMP implementation.

**Figure 1-9: Public financial management system (PFMS)**



Source: CAMP TT

### 1.2.4.3 Implementation management areas and tools

Successful CAMP and IDMP implementation will need tools in the three principal management areas shown in Table 1-3. Good application of such tools requires well developed institutional capacity, and a number of proposed projects aim to develop such institutional capacity.

**Table 1-3: Implementation management areas**

Implementation management area	Purpose of management
Operational management	Secures efficient and effective delivery of public services to create positive outcomes and impact
Financial management	Secures accountable, transparent, efficient and effective application of funds to deliver public services
Human resource management	Secures dynamic, productive, efficient and effective functioning of the public sector

Source: CAMP TT

For management in these three areas, practical tools (Table 1-4) to handle day-to-day activities at all the levels of government will be available: 1) CAMP investment plan (CAMP IP) and IDMP investment plan (IDMP IP), 2) national annual budget (NAB), state annual budget (SAB) and county annual budget (CAB), and 3) annual work plan and budget (AWPB). The AWPB is an important and practical tool for sound project planning and implementation, currently used in projects supported and implemented by development partners. Coordinated application of AWPBs by all implementing ministries will be promoted, and significant attention given to the proper use of AWPBs.

**Table 1-4: Implementation management tools**

Implementation management tool	Description of tool
CAMP investment plan (CAMP IP) and IDMP investment plan (IDMP IP)	Multi-year, short-term, medium-term and long-term CAMP and IDMP planning management tools
National annual budget (NAB), state annual budget (SAB) and county annual budget (CAB)	Annual planning and implementation management tools based on AWPB
Annual work plan and budget (AWPB)	Annual project-wise planning and implementation management tool for detailed budgeting, and monitoring and evaluation for operational, financial and human resources management. AWPB include: <ul style="list-style-type: none"> <li>1) overall project plan;</li> <li>2) annual work plan and budget; and</li> <li>3) various sub-tools consistent with the PFMS of GRSS</li> </ul>

Source: CAMP TT

## **2. Investment plan**

### **2.1 Approach and overview of CAMP investment plan**

#### **2.1.1 Fact-based project identification**

Annex I (CAMP Investment Plan) contains the CAMP investment plan which consists of project profiles in an investment planning space. The project profiles are best considered as detailed implementation plans carrying core information to trigger the funding interest of national and state governments, development partners and the private sector. The project profiles describe the activities necessary to take advantage of the opportunities identified for agricultural development, by overcoming observed challenges and constraints, in order to achieve the objectives of the CAMP development themes. The subsector opportunities, and challenges and constraints were identified by the in-depth situation analysis, whereas the CAMP development themes were defined to reflect the expected development path of the agriculture sector. Justifications for the projects are given in each project profile; project profiles address the constraints and identify areas with high potential to ensure optimal economic and social benefits so as to accelerate agricultural development.

The identification of projects is based on a very firm foundation of facts, well informed expert opinion, published data, and the opinions and wishes of stakeholders, including national and state governments, academia, the private sector, development partners, NGOs and civil society. A large amount of data on the agriculture sector was collected during the preparation of the Situation Analysis Report 2013/2015 (SAR). This came from already published surveys and reports,<sup>8</sup> more than 50 field visits to the ten states, interviews with stakeholders and interpretation of databases of data collected during the field visits, and the National Bureau of Statistics National Baseline Household Survey 2009.<sup>9</sup> The physical and agricultural characteristics of the 10 states have been collated.<sup>10</sup> The situation analysis, together with other annexes and appendices, is the most up to date and detailed body of information on the agriculture sector in South Sudan. Some of the findings contained in the Situation Analysis Report are truly revelatory, overturning many years of misinformation.<sup>11</sup>

#### **2.1.2 In-depth understanding of the agriculture sector**

Since the estimated public resources available for CAMP implementation are limited (Section 3.2), public financial resources will have to be applied prudently to targeted segments of key private sector players, markets and value chains to produce maximum possible outcomes and impacts in the sector. Public interventions must be done to mobilise economic and social incentives for the key private sector players and markets to increase the effectiveness of public interventions. To design such interventions and assist in detailed project planning, an in-depth understanding of the agriculture sector and the characteristics and behaviour of the various players and markets is needed. Key observations regarding the sector, players and markets and public institutions are introduced in Section 3.1 in order to facilitate discussions on effective CAMP implementation.

##### **2.1.2.1 Agriculture sector**

The goal of the investment plan is to increase the performance of the national economy, through enhancing the environment for private sector investment and the productivity of labour and capital in the agriculture sector. The CAMP development themes, portraying the

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<sup>8</sup> Annex IV. Situation Analysis Report 2013/2015. References.

<sup>9</sup> Annex V. Livelihood Zone Data Book 2014.

<sup>10</sup> Annex VI. State Profile 2013.

<sup>11</sup> An example being the finding that the annual consumption of fish in South Sudan is 17kg/capita/year; as opposed to the usually quoted figure of less than 2kg/capita/year.

expected agriculture development path, are closely related to the sector's past performance, identified potentials and constraints, and social, economic and institutional factors and their dynamics. Therefore, a clear understanding of all aspects of the agriculture sector is needed and will assist in monitoring impacts of CAMP implementation. Since CAMP implementation will impact the macroeconomic environment, particular attention is paid to the contribution of projects to the growth and transformation of the national economy. The CAMP investment plan will contribute to economic diversification and stabilisation, and sustainable growth under a volatile and unfavourable macroeconomic environment. The investment plan assumes increased investment of oil based revenues in quality public service delivery and infrastructure development.<sup>12</sup>

### *2.1.2.2 Identification of key players and markets*

Part of the investment plan for each subsector consists of the identification of the key players. Public services will be delivered to the players (or change agents) to change their behaviour in order to increase their productivity. It is important to understand the socioeconomic characteristics of the key players and how they participate in the labour and output markets where employment, production, trade and consumption of agricultural goods take place. This understanding will allow the design of effective, targeted public service delivery to beneficiaries (e.g. IDPs), labour markets (e.g. skilled or unskilled agricultural labour) and value chains (e.g. producers, wholesalers or retailers). It is also required for the development of monitoring and evaluation procedures where outcomes and impacts are properly measured and evaluated. Outcomes and impacts of project interventions as described in the project profiles are: 1) change in the key players production and market behaviours, and 2) value addition generated by the key players. These changes and value addition will have to be closely monitored and evaluated during CAMP implementation to allow for improvement of the interventions.

### **2.1.3 Project prioritisation, sequencing and linkages**

To set implementation priorities and schedules for the proposed projects, a comprehensive set of criteria are considered so as to produce maximum impact of public investment with respect to the expected development path of the agriculture sector (CAMP development themes). These criteria are: 1) the sequence of development themes - reconstruction and recovery, food and nutrition security, economic growth and livelihood improvement, agriculture sector transformation, and the crosscutting and continuing theme of institutional development; 2) the aggregated project costs of the investment plans compared to macroeconomic and financial resource availability forecasts (scenarios)<sup>13</sup>; 3) availability and expected improvement of human resource capacity; 4) projects that set up the legislative and institutional frameworks fundamental to public service delivery and regulation of private sector activities and markets; 5) synergies to be obtained from coordination between various CAMP projects; and 6) early implementation of projects that have immediate and large beneficial impact in the current (in 2015) agriculture sector situation.

Those projects that have an immediate and fundamental impact have been given high priority in the IPS schedule and generally have been included in the development themes of reconstruction and recovery and food and nutrition security. Both of these development themes are engineered for short term, high impact activities.

The available budget of the Government of South Sudan is of critical importance, as this could limit how much money will be available for development activities in coming years. Initially it is unlikely that the budget will be significantly increased from the 2013 budget, but depending on what emphasis is placed on agriculture development, the relative size of the

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<sup>12</sup> Chapter 3.2.

<sup>13</sup> Chapter 3.2.

budget may rise according to the funding availability scenarios examined in detail in Section 3.2.

There are important linkages between subsectors and their project profiles. The opportunities, challenges and constraints of a subsector can also be the issues of other subsectors. Many components or activities of projects reinforce other projects and some of them affect the whole subsector or sector. The achievement of the CAMP development themes will require intensive coordination between CAMP authorities and non-CAMP authorities, and within the CAMP process itself. Examples of such linkages are crops and livestock for integrated agriculture/aquaculture fish farming; crop production for feed for chickens, pig and fish farming; and, transport networks for moving the products of agriculture. Some regulatory and control measures rely on other subsectors, examples are quarantine for the fisheries and livestock subsectors; and the National Bureau of Standards for implementing the Codex Alimentarius for all food production and retailing.

Each subsector has identified projects as high, medium, and longer term priority for implementation. These priorities correlate to the “phases” in the IPS.

### ***2.1.4 Development themes and project justification***

During the CAMP implementation period it is expected that the sector will transform from subsistence agriculture to commercial, industrial and sustainable agriculture as a result of productivity improvements; and that asset and capital accumulation will be used for welfare gains and further investment in the sector. It is also anticipated that the country will resolve its internal conflicts and insecurity. The CAMP development themes represent the expected stages of agricultural development starting with recovery from conflict. However the themes are closely interlinked and can occur concurrently.

#### ***2.1.4.1 Institutional development***

The major constraints to agriculture development are not agriculture sector specific, they are national and cross sectoral. The theme of institutional development is presented here and describes the major constraints. Government public service delivery capacity is further discussed in Section 3.1.

Institutional development is primarily designed to address the low service delivery capacity in the public sector.<sup>14</sup> Without efficient and effective public service delivery no development objectives will be achieved. To mobilise financial resources an accountable and trusted public financial management system must be in place to restore the trust between the public and private sector actors; corruption and illegal practices must be eliminated; to allow for optimal public service delivery fair and merit based human resource management needs to be implemented.

#### ***Role of government***

The role of the government is to develop a legal, fiscal, and business friendly environment that encourages the private sector to invest. Corruption, lack of security, poor infrastructure and communications, and a generalised skills shortage are all major constraints. Provision of a modern law and corresponding regulations to underpin the various subsectors' development and oversight of activities of the private sector is also critical. The public financial management system (PFMS) does not function well at national or local government level; there is a lack of accountability and transparency. Revenue administration systems are weak and are open to abuse; multiple taxation (often illegal) is a significant burden on business. Uncertainty about land tenure discourages investors.

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<sup>14</sup> For a detailed discussion of this see Annex III. Development Options Analysis 2014. Chapter 4.



The four production subsectors (crops, livestock, forestry, crops and fisheries) are not integrated within themselves nor with any of the other subsectors. There is no coordination between ministries. Trans-boundary issues are neglected, including quarantine problems, shared resources, sharing knowledge and illegal trade.

Institutional development subsector projects that address these constraints focus on public sector development, such as governance, accountability and decentralisation, public financial management (PFM), regulatory and revenue collection services, infrastructure development, aid coordination, and collaboration with civil society organisations. They also focus on the development of legislative and institutional frameworks that are needed by all subsectors. Collaboration with other ministries is everywhere included, on issues such as poor infrastructure, land tenure, taxation etc. All other subsectors justify additional projects to develop a legislative framework which will achieve consistent enforcement of laws and regulations. All agree on the urgency of these projects so as to secure a foundation for improved public service delivery.

### ***Government human resources capacity***

To create an enabling environment will require that the skills of government staff at all levels of government are enhanced so that they can manage, develop and protect the renewable natural resources of the country, which currently they cannot do effectively.<sup>15</sup> The ability to actually manage the projects proposed, financially and logistically, is a major constraint. All subsectors recognise the importance of public sector capacity development (financial, human resources, and organisational).

Projects are recommended by all subsectors so that the government can begin the enormous task to improve the skills of its staff in policy planning and implementation, project management, public financial management etc.

### ***Use of agriculture sector knowledge and information***

Lack of reliable data has undermined planning, coordination, delivery of services and investment in the agriculture sector. There are no established systems that collect data to enable monitoring of subsector outputs or performance. There is incomplete data on the inventory of resources (number of livestock, size of forested areas, stocks of fish etc.).

Limited training facilities combined with limited human resources are a recurring constraint affecting the private sector. The current facilities and services do not reach the private sector at the level required for broad technology adoption and implementation. The private sector's lack of skilled human resources will be one of the main constraints to successful CAMP implementation. Many of the proposed projects depend on human resources which currently do not exist. All subsectors have identified limited training for the private sector as a major constraint.

The livestock, forestry and fisheries subsectors emphasise public interventions to establish and improve information management, and the research, training and extension capability of public sector organisations. The crop subsector places such public capacity building interventions in other development themes, emphasising the importance of practical, on-the-ground knowledge creation and training.

#### ***2.1.4.2 Reconstruction and recovery***

Reconstruction and recovery from the long lasting civil war and the recent (and continuing) civil unrest is essential. Law and order and trust among the key players in the sector, and the re-establishment of effective public service delivery are major priorities in all subsector

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<sup>15</sup> Annex IV. Situation Analysis Report 2013/2015. Section 5.2.

interventions. CAMP implementation will support production enhancement and local peace processes through: setting up institutional and legislative frameworks to achieve resolution of conflict; and the restoration of effective and fair public service delivery.

The crop subsector will meet the urgent needs of 1.5 million IDPs and returnees affected by the civil unrest in December 2013. It will provide technical assistance for farming to IDPs/returnees and host communities in order to facilitate the process of settlement/resettlement. In the absence of core public services, the livestock subsector focuses on establishing a legislative framework and obtaining accurate information about livestock numbers. Projects setting up funding (grants and microcredit) are proposed by the forestry and fisheries subsectors. Urgent needs for a legislative framework and prevention of HIV infection in fishing communities will be addressed in the fisheries subsector.

#### *2.1.4.3 Food and nutrition security*

The development theme of food and nutrition security is also high priority and will be addressed during the early stages of CAMP implementation.

CAMP supports two broad approaches to secure food and nutrition security: 1) support to individuals or collective crop, forestry, and fisheries production, and 2) enhancement of public service delivery capacity in the livestock subsector. Subsistence farmers will benefit from improved seed production and access to better extension services. Small scale aquaculture in the fisheries subsector will improve the food security of individual households.

Collective resource management, production, processing, and marketing are included in the following projects: in the crop subsector, farmer organisations aim to make subsistence farmers more competitive in the input and output markets; participatory management of public forests and community forestry will support income diversification and resilience; and co-management of the wild fisheries resources aims to secure sustainable management of the wild fisheries resources and stable long term income flows from capture fisheries.

In the livestock subsector core public services are almost non-existent. Emphasis is placed on first improving core public services rather than direct service delivery. Projects address the enhancement of: disease control planning capacity; animal diagnostics, disease response and quarantine systems; feed testing and analysis; and, veterinary drug distribution. Improvement of livestock infrastructure, such as water catchment, and watering and livestock market facilities, will commence to provide the foundation for improved production and marketing.

#### *2.1.4.4 Economic growth and livelihood improvement*

Public interventions under this theme will focus on support to commercial farmers or farmers in the transition from subsistence to commercial farming. Import and export markets of agricultural inputs and outputs will be strengthened with the aim of increasing the demand and supply of agricultural goods. Mobilisation of the large unused labour force in rural areas and the gradual process of commercialisation of subsistence production are anticipated.

To achieve economic growth and livelihood improvement, support to commercially oriented, capital intensive and specialised agricultural production will be provided. In all subsectors commercialisation of farming will be encouraged. In the crop subsector, direct support to progressive and medium- to large-scale farmers will be in areas such as crop production, urban and peri-urban vegetable production, and small and medium-scale irrigation. In the livestock subsector, support includes commercialisation of red meat (including pork) and poultry production, beekeeping, dairy, feed mills, forage crop production, hides and skins, auction facilities, and harvest facilities. In the forestry subsector, support will be given to large-scale afforestation, value added forest products and marketing. In the fisheries

subsector, support will be in large-scale and capital intensive aquaculture, and processing and marketing capability for higher value addition. Public sector support to achieve efficiency gains from subsector linkages will be encouraged, for example, the feed value chain involves the crop, livestock and fisheries subsectors.

The crop subsector will focus on public sector capacity to deliver research, extension and training services, in order to enhance private sector productivity and value addition. The livestock subsector will establish livestock identification and traceability systems. Projects will commence that secure forest conservation, sustainable management and biological diversity. For the fisheries subsector, a fisheries Competent Authority will be established to ensure quality.

#### *2.1.4.5 Agriculture sector transformation*

To achieve agriculture sector transformation, public service delivery aims to further increase the value added to agricultural outputs; achieve agricultural outputs that are competitive both in international and regional markets; and shift labour from the rural to urban sector.

Through public service delivery, cash crop production will increase; this will be for export with longer value chains and higher value addition. The crop subsector will strengthen regulatory and quality control capacity by investing in pest and disease control systems, and quality standards and control systems. Public interventions in the livestock subsector will support: the production of high value added products and efficient rangeland management through the establishment of demonstration farms; and, livestock producer associations who can benefit from competitive and fairly organised livestock markets. In the forestry subsector, higher value addition will be achieved through more domestic and international trade of forest products. High value addition in the fisheries value chain will be achieved by capitalising on the new fish quality standards.

## 2.2 Crop subsector

### 2.2.1 Overview

Over 95% of the territory of South Sudan is arable and 50% of it is prime agricultural land suitable for various crops. However, only 3.8% is utilised, while 62.6% of it is covered by trees.<sup>16</sup> So far, only limited areas are utilised for crop production. Almost all farming areas are rain-fed, thus agricultural production is heavily influenced by rainfall. Precipitation generally increases from north-east to south-west and rainfall patterns tend to be erratic nowadays. Based on the precipitation, water availability and livelihood patterns, the country is categorised into seven livelihood zones and different types of agriculture are practiced in each zone.

Main crops cultivated are sorghum, maize, cassava, groundnuts, sesame, pearl and finger millets, beans, peas, sweet potato and rice. Sorghum is the staple food and is widely grown in the whole country. Usually sorghum is grown with other crops, like groundnuts, sesame, cowpeas, beans, and pumpkins. Maize is grown mainly in the Greater Equatoria Region, especially in the Greenbelt Zone. Farmers in the northern part of the country have also recently began to grow maize since sorghum, their main crop, is increasingly being severely damaged by birds; farmers choose maize because it suffers less damage by birds. Cassava is mainly grown in the Greater Equatoria Region, especially in Western Equatoria State. Groundnuts are a very important crop for farmers as both food and cash crops and are widely grown.

Vegetables are produced near homesteads, mainly for home consumption. Most fresh vegetables in markets come from Uganda, Kenya and Sudan, while some green leafy vegetables like amaranthus, Jew's mallow and okra are supplied to markets from peri-urban areas. Peas and beans (cowpeas, kidney beans, green gram and pigeon peas) are grown near homesteads, again mainly for home consumption. Fruit is also grown throughout the country, especially in the Greenbelt and Hills and Mountains zones. Pineapple, mango, avocado, citrus, papaya, passion fruit, jack fruit and guava are produced mainly for local consumption. A small volume is also sold in urban markets while a large volume of fruit is imported mainly from Uganda. Coffee and tea are also grown in both zones but production is limited. South Sudan has great potential for vegetable, fruit and cash crop production, with substantial water resources and highly fertile soil, which could reduce importation.

About 78% of households are engaged in agriculture and the average area harvested per household is about 1.12ha.<sup>17</sup> The majority are subsistence farmers who use traditional methods. The quality of seeds tends to be variable since seeds are a mixture of unknown varieties and liable to damage by insects. Use of high yielding varieties is not common in rural areas since it is difficult for rural farmers to access them. Pesticides and herbicides are not used at all except by a limited number of progressive farmers and in large-scale mechanised schemes.

Even though vast arable land is available, farmers cannot capitalise it fully due to insufficient knowledge, skills and experience; use of simple hand tools; underdevelopment of mechanised farming; minimal irrigation facilities; and, the high transaction cost of the rural labour market. As a result, food self-sufficiency has not been achieved since 2009. Net cereal production was 892,004 tons in 2013 against total cereal requirement of 1,300,552

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<sup>16</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.1.

<sup>17</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.5.4.1.

tons, leaving a cereal deficit in 2013 of 408,548 tons.<sup>18</sup> Food insecurity has been exacerbated by the internal conflict that broke out in December 2013.

## **2.2.2 Key players**

### *2.2.2.1 Subsistence farmers*

Currently, the major key players of crop subsector are individual producers, especially subsistence farmers. Their yield is quite low (cereal yield: about 1.0 Mt/ha<sup>19</sup>) and area harvested per household is not large enough (about 2 feddans<sup>20</sup>) for feeding their household. Subsistence farmers mainly use family and communal labour for farming activities (e.g., ploughing, sowing, weeding and harvesting).<sup>21</sup> They usually do not have enough funds to hire labourers. Ploughing, weeding and harvesting are labour intensive work, so it is difficult for them to expand the area cultivated using only family labour. Some try to hire labourers, but the cost of labour is extremely high and the supply of labourers is limited. Thus, they sometimes give up trying to expand their cultivated area. There is a tendency for young people not to want to farm, so scarcity of labour for farming is becoming a serious issue.

They use hand tools for farming, e.g., hoes, pangas, malodas (traditional hoes), knives, sickles and axes. They cannot afford to use agricultural inputs because of limited funds and unavailability of inputs. They use traditional varieties of seeds which are obtained from their own harvest of the previous season which do not give high yields. Since they are practicing rain-fed, low input farming, yields are usually quite low and production is sometimes not enough to feed household members throughout the year.

Subsistence farmers in the Greenbelt Zone are suffering from large postharvest losses in the first season.<sup>22</sup> They generally use traditional storage facilities for grains and dried cassava, which sometimes do not perform well due to high humidity. Storage capacity is also limited.

Insecurity is severely affecting the livelihoods of subsistence farmers. Due to insecurity caused by the civil unrest that started in December 2013 and intercommunal or tribal conflicts, some farmers leave their homes and become internally displaced persons (IDPs). If this happens early in the growing season, they are unable to plant and might face serious food insecurity.

### *2.2.2.2 Medium scale commercial farmers (progressive farmers)*

Although the majority of farmers are subsistence farmers, there are some medium-scale commercial farmers.<sup>23</sup> They are cultivating relatively large farmlands and are engaged in commercial farming. Many of them have access to tractor services for ploughing, agricultural inputs (e.g. quality seeds, pesticides and chemical fertilisers), hired labourers, market information and traders for selling produce. Many of the medium-scale commercial farmers started commercial farming recently and it seems that their number is increasing rapidly, especially in the Greenbelt Zone.

Some of them are shop owners and government officers, so they have other income sources besides agriculture. Their educational levels are relatively high and they are eager to accept and apply new technologies. They sometimes have precise records of their farm operations

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<sup>18</sup> FAO/WFP. 2014. *Crop and Food Security Assessment Mission (CFSAM) to South Sudan*. p.6. Rome: FAO/WFP

<sup>19</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.5.2.

<sup>20</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.5.4.

<sup>21</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.5.4.2.

<sup>22</sup> In the Greenbelt Zone, farmers can cultivate crops twice a year due to favourable rainfall patterns.

<sup>23</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.5.4.3.

and can calculate their profit and loss easily. Many of them have connections with middlemen and traders. They know the season of the highest prices of their produce and, as they own storage facilities, wait for the best time to sell. They have a clear vision of how to develop a farming operation over a few years. They recognise the business potential of agriculture.

Although the number of medium-scale commercial farmers is still limited, it was found that some farmers have already transformed their operations from subsistence to commercial farming and others are new to commercial farming. They are looking for financial institutions that will provide credit for further expansion of their operations.

#### *2.2.2.3 Cooperatives/producer associations*

As of 2013, 566 cooperatives were registered by national and state ministries; 212 (38%) were agricultural cooperatives which are supervised by the Ministry of Agriculture, Forestry, Cooperative and Rural Development.<sup>24</sup> Most cooperatives and farmers' associations are inactive due to limited human and financial capacity. A number of farmer based organisations (FBOs) have been formed to receive technical and financial assistance from NGOs and donors.

#### *2.2.2.4 Large scale commercial farmers*

In Renk County, Upper Nile State in the Eastern Flood Plains Zone, the Renk Irrigation Scheme was operated by the Sudanese government before the independence of South Sudan. There are 23 sub-schemes in the scheme and as of June 2013, 9 sub-schemes were operated by the government and the rest by private farmers.<sup>25</sup> There is no operational irrigation sub-scheme in the scheme due to breakage of pumps and insufficient funds for operation provided by the government. However, many private farmers are engaged in rain-fed mechanised large-scale farming in and outside the scheme.

These farmers mainly grow sorghum, sesame, millet and groundnuts. Their farm sizes are very large compared to farms in other areas of the country, with one farmer owning more than one thousand feddans. Land preparation is done by hired tractors and sowing is done by both mechanised broadcasters and manual labour. Weeding and harvesting are done manually.

This area has a semi-arid climate with total annual precipitation of about 500 mm. Farmers have no irrigation facilities, thus rainfall is the most crucial determinant of yield. Moreover, damage from pests is very serious, particularly by birds. There are no pest control measures. Some farmers mentioned that they cultivated 220 feddans of sorghum in 2012 but they only harvested 5 bags (100kg/bag) due to damage from birds.

#### *2.2.2.5 Domestic and regional merchants*

There are different types of merchants who play different roles in the markets: traders, middlemen, wholesalers and retailers.<sup>26</sup>

##### ***Traders (importers)***

They normally bring agricultural products from outside of a market. They may bring products from foreign countries or other states in South Sudan. Traders are also commonly called importers. Traders are either South Sudanese or foreigners such as Ugandan, Sudanese, Kenyans, etc.

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<sup>24</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.4.5.

<sup>25</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.5.4.4.

<sup>26</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.7.1.

### ***Middlemen***

They buy agricultural products from traders and sell them to a wholesaler or retailer at a market. Middlemen do not own stores at a market but own a storage facility. They purchase large volumes of agricultural products from traders and stay at a market. Another type of middleman visits farms and purchases products to sell to wholesalers and retailers.

### ***Wholesalers***

They own a store in or close to a market and sell products in bulk to retailers and other wholesalers. They tend to deal in cereal products because these products are non-perishable and can be stored for a longer time. Some wholesalers cross the border of South Sudan to purchase agricultural products in bulk and bring them back themselves.

### ***Retailers***

They buy products either from wholesalers, middlemen, or traders directly. They rent space at a market and pay a small amount of market fees on a daily basis.

When farmers bring their products to markets, normally, they either sell their products to middlemen or retailers directly. It depends on their relationships. Importers may sell agricultural products directly to wholesalers or retailers. In many major markets in different states, foreign merchants are found. They know farmers, brokers, associations, wholesalers and traders in their own countries and so have an advantage.

#### ***2.2.2.6 Agro-dealers***

In South Sudan, activities by the private sector in agriculture are very limited, especially, agro-dealers.<sup>27</sup> There are several agro-dealers in Juba and some in Central Equatoria, Western Equatoria and Jonglei states. In other areas, very few agro-dealers were found. Even though the role of agro-dealers is important for all states, agro-dealers are concentrated in the southern parts of the country and limited in number. Local farmers are the main customers for all agro-dealers, but sometimes NGOs purchase seeds from them. In other major towns such as Malakal, Wau and Rumbek, there are no agro-dealers but there are hardware stores which also sell a few kinds of cereal and vegetable seeds.

The common challenges are high cost of transportation and taxes, farmers' limited knowledge about agricultural inputs, lack of storage facilities, limited packing technology, lack of capital and high interest rate for loans, and fluctuations in exchange rates between South Sudanese pounds (SSP) and foreign currencies. These challenges limit agro-dealers' business opportunities.

#### ***2.2.2.7 Government***

For agriculture development the government should create a favourable environment for the private sector. It does not need to run businesses itself. The government has to address issues on the legal and regulatory framework and its enforcement, research, extension, training, quarantine, taxation and subsidies. The government is also expected to carry out decentralisation to deliver more services for beneficiaries on the ground.

### ***2.2.3 Overview of project rationale***

The situation analysis identified the opportunities, challenges and constraints of the crop subsector summarised in Table 2-1, which also shows how the projects propose to address them and how they relate to the development themes.

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<sup>27</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.4.6.

The main opportunities for the development of the crop subsector are:

- South Sudan has abundant natural resources for agriculture, specially land and water. Crop production has great potential since vast areas are still available for land reclamation.
- The country can produce sufficient staple crops (e.g. sorghum, maize, rice, cassava), achieve food security and export surpluses to neighbouring countries due to vast unutilised arable land.
- Due to favourable rainfall patterns and soil conditions, the country can produce horticultural and cash crops (e.g. vegetables, fruit, peas, beans, sesame and groundnuts), which are suitable crops for value chain development.
- Export crops (e.g. coffee, tea, oil palm, sunflower, sesame, fruit and cotton) also have high potential. These export crops will be produced by large and medium scale farmers, who have close linkages with private investors and regional traders. The crops will be processed for further value addition in the country, which generates more job opportunities, and exported to regional and international markets.
- Medium- and large-scale irrigation schemes can be developed since sufficient water is available from the River Nile and its tributaries. Small-scale irrigation development is possible in the Greenbelt Zone by using water from small streams. Irrigation development will contribute to increasing productivity and stability of production throughout the year.

Figure 2-1 shows the investment planning space of the crop subsector, which describes development themes, project titles, estimated project costs and the sequence of project implementations according to project priorities and the funding availability.

**Table 2-1: Crop: opportunities, challenges, development themes and projects**

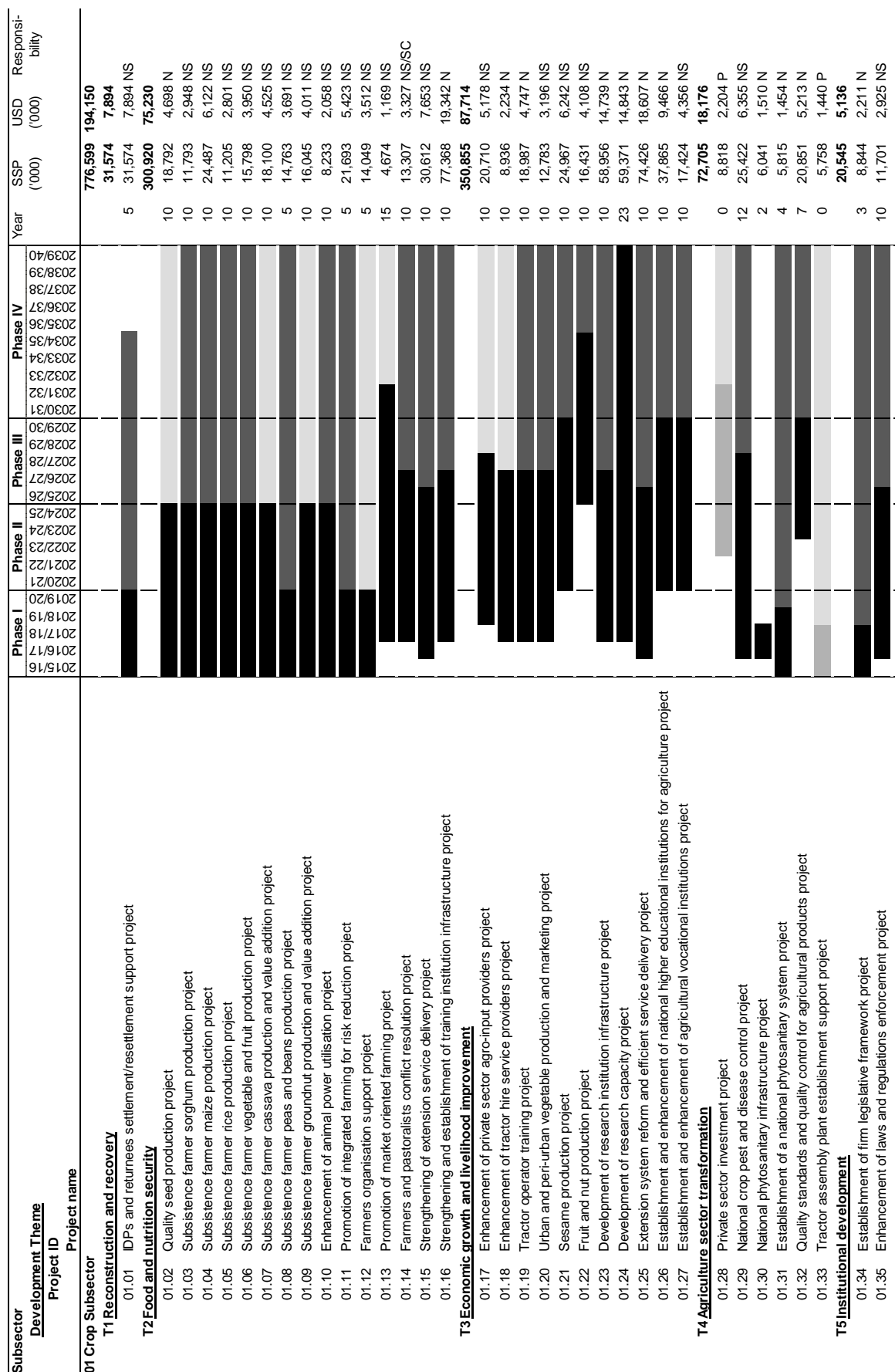
<b>Opportunities</b>
<b>Challenges and constraints</b>
<b>Development Themes</b>
<b>Projects</b>
<b>Abundant natural resources for agriculture, specially land and water. A great potential of crop production due to vast available land not reclaimed</b>
Insecurity due to conflicts over natural resource utilisation between farmers and pastoralists and among pastoralists <i>Food and nutrition security</i> 01.14 Farmers and pastoralists conflict resolution project
Conflicts over natural resource utilisation between IDPs/returnees and host communities <i>Reconstruction and recovery</i> 01.01 IDPs and returnees settlement/resettlement support project
High risk of unreliable weather conditions <i>Food and nutrition security</i> 01.13 Promotion of integrated farming for risk reduction project
<b>Produce sufficient staple crops (e.g. sorghum, maize, rice, cassava), to achieve food security and export surpluses to neighbouring countries</b>
Low agriculture production <i>Food and nutrition security</i> 01.03 Subsistence farmer sorghum production project 01.04 Subsistence farmer maize production project 01.05 Subsistence farmer rice production project 01.07 Subsistence farmer cassava production and value addition project <i>Agriculture sector transformation</i> 01.30 National crop pest and disease control project



**Table 2-1: Crop: opportunities, challenges, development themes and projects (cont.)**

<b>Opportunities</b>
<b>Challenges and constraints</b>
<b>Development Themes</b>
<b>Projects</b>
Weak service delivery to farmers (weak extension service delivery, limited opportunities to access training, limited educational institutions to develop quality human resources for agricultural development)
<i>Food and nutrition security</i>
01.15 Strengthening of extension service delivery project
01.16 Strengthening and establishment of training institution infrastructure project
<i>Economic growth and livelihood improvement</i>
01.23 Development of research institution infrastructure project
01.24 Development of research capacity project
01.25 Extension system reform and efficient service delivery project
01.26 Establishment and enhancement of national higher educational institutions for agriculture project
01.27 Establishment and enhancement of agricultural vocational institutions project
Poorly organised farmers
<i>Food and nutrition security</i>
01.12 Farmers organisation support project
01.13 Promotion of market oriented farming project
Poor availability of agricultural inputs
<i>Food and nutrition security</i>
01.02 Quality seed production project
Poor availability of service providers
<i>Food and nutrition security</i>
01.10 Enhancement of animal power utilisation project
<i>Economic growth and livelihood improvement</i>
01.17 Enhancement of private sector agro-input providers project
01.18 Enhancement of tractor hire service providers project
01.19 Tractor operator training project
<i>Agriculture sector transformation</i>
01.33 Tractor assembly plant establishment support project
<b>Produce horticultural and cash crops (e.g. vegetables, fruit, beans, sesame and groundnut), which are suitable for value chain development</b>
Low agriculture production
<i>Food and nutrition security</i>
01.06 Subsistence farmer vegetable and fruit production project
01.08 Subsistence farmer peas and beans production project
01.09 Subsistence farmer groundnut production and value addition project
<i>Economic growth and livelihood improvement</i>
01.20 Urban and peri-urban vegetable production and marketing project
01.21 Sesame production project
01.22 Fruit and nut production project
<b>A high potential of export crop production (e.g. coffee, tea, oil palm, sunflower, sesame, fruit and cotton) and value addition to generate more job opportunities and exports to international markets</b>
Unfavourable environment for private sector investment
<i>Agriculture sector transformation</i>
01.28 Private sector investment project
<i>Institutional development</i>
01.34 Establishment of firm legislative framework project
01.35 Enhancement of laws and regulations enforcement project
No proper quarantine system in the country
<i>Agriculture sector transformation</i>
01.30 National phytosanitary infrastructure project
01.31 Establishment of a national phytosanitary system project
No quality standards and quality control
<i>Agriculture sector transformation</i>
01.32 Quality standards and quality control for agricultural products project
<b>Develop potential of irrigation schemes to increase productivity and stability of production</b>
Limited infrastructure, specially irrigation facilities (Feeder roads are covered by the Institutional Development Feeder roads and rural markets construction/rehabilitation project.)
<i>Economic growth and livelihood improvement</i>
Irrigation Development Master Plan
<i>Agriculture sector transformation</i>
Irrigation Development Master Plan

**Figure 2-1: Investment planning space (IPS) for the crop subsector**



Note: N: National government; S: State government; P: private sector  
 PPP: Public and private sector partnership  
 Public sector project  
 Private sector project  
 Routine work by government  
 Routine work by private sector

## **2.2.4 Justification of projects by development theme**

### **2.2.4.1 Reconstruction and recovery**

#### **IDPs and returnees settlement/resettlement support**

One of the most urgent needs under the crop subsector is to support IDPs and returnees affected by the civil unrest in December 2013. Over 1.5 million people were displaced from their homes from December 2013 to June 2014, including over 400,000 people who fled to neighbouring countries such as Uganda, Kenya, Ethiopia and Sudan.<sup>28</sup> Due to this situation, 01.01 IDPs and returnees settlement/resettlement support project will be implemented to facilitate settlement/resettlement processes and harmonisation between IDPs/returnees and host communities by providing technical assistance for farming.

### **2.2.4.2 Food and nutrition security**

#### **Direct support for subsistence farmers**

According to the special report of the FAO/WFP Crop and Food Security Assessment Mission (CFSAM) to South Sudan in 2014,<sup>29</sup> although cereal harvested area and net cereal production increased compared to those of 2013, the estimated cereal deficit in 2014 would be 408,548 tons, which is much larger than the 2013 deficit of 370,991 tons. The food deficit situation will get much worse if internal disputes continue. To improve food security, increasing food production by vulnerable subsistence farmers (the majority of whom are women) is important. The 01.03 Subsistence farmer sorghum production project, 01.04 Subsistence farmer maize production project, 01.05 Subsistence farmer rice production project, and 01.07 Subsistence farmer cassava production and value addition project will support an increase in major staple food production by subsistence farmers. To achieve nutrition security the 01.06 Subsistence farmer vegetable and fruit production project, 01.08 Subsistence farmer peas and beans production project and 01.09 Subsistence farmer groundnut production and value addition project will focus on the balanced diet of subsistence farmer households by producing various types of crops, vegetables and fruits.

Expansion of farmed land will also contribute to increased production. However, family manual labour is limited and utilisation of hired labour is also difficult due to high cost and limited availability. The 01.10 Enhancement of animal power utilisation project will increase awareness of the advantages of draft animal power and provide technical assistance on how to utilise draft animals. This will allow farmers to expand their cultivated areas.

The 01.11 Promotion of integrated farming for risk reduction project will improve resilience and reduce risks from erratic rainfall by introducing drought resistant crops and livestock, especially small ruminants such as goats and sheep. If crops fail, farmers will be able to sell their livestock to get immediate cash income to recover.

#### **Conflict resolution between farmers and pastoralists**

Livestock coming from other areas with armed pastoralists often destroys farmers' crops. To mitigate this tension, the 01.14 Farmers and pastoralists conflict resolution project will provide support to train and activate a protection force to improve security in the conflict areas. The project will also assist with construction of water points for livestock and provide training courses to farmers and pastoralists on conflict resolution, improved rangeland management, modern grazing systems and improved forage crop production.

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<sup>28</sup> UNHCR. 2014. *South Sudan Refugee Situation: June 2014*, pp.23-27. Geneva: UNHCR and UNOCHA. 2014. *South Sudan Crisis Situation Report: July 2014*. Geneva: UNOCHA.

<sup>29</sup> FAO/WFP. 2014. *Crop and Food Security Assessment Mission (CFSAM) to South Sudan*. p.6. Rome: FAO/WFP.

### **Quality seed production**

Access to quality seeds is one of the key elements for farmers to increase yield and improve quality of products. Due to the weak seed supply system most farmers cannot access quality seeds. The 01.02 Quality seed production project will support improving seed production systems and enhancing farmers' access to quality, improved and adapted seed varieties, through building the capacity of national research institutes, commercial seed companies, extension officers and farmers.

### **Farmer organisations**

The majority of farmers lack the capacity to gather their harvest into a large volume to sell; wholesalers and traders, who need large volumes, tend to purchase products in bulk in foreign countries. Also many farmers would like (and are unable) to access micro finance schemes so as to be able to invest in their farms. The number of active farmer organisations, such as cooperatives, associations and Farmer Based Organisations (FBOs), is quite small. Thus, formation and strengthening of farmer organisations will be supported in the 01.12 Farmers organisation support project. The 01.13 Promotion of market oriented farming project will also support existing and newly formed farmer organisations to get access to public extension services, micro credit, training, and market information to promote more active marketing. Overall micro credit scheme development will be described by the Institutional Development subsector.

### **Extension and training for subsistence farmers**

Capacity development of subsistence farmers is one of the most important measures to achieve food and nutrition security. However, extension services for subsistence farmers are extremely limited and weak. The 01.15 Strengthening of extension service delivery project will enhance the capacity of both Agriculture Extension Officers (AEOs) and selected farmers as community based extension workers (CBEWs) by providing training. The project will also focus on strengthening the operation of the extension system through establishing regular meeting and supervision for AEOs and providing transport measures to ensure effective extension service delivery. Simultaneously, existing training centre facilities will be rehabilitated and new centres will be established through the 01.16 Strengthening and establishment of training institution infrastructure project.

#### **2.2.4.3 Economic growth and livelihood improvement**

##### **Direct support for progressive and large-scale farmers**

In South Sudan, although there are only a small number of progressive and large-scale farmers, they will play a key role in economic growth and agriculture transformation. They have the financial capacity to access private service providers (e.g. agro-dealers and tractor hire services); however, the number of private service providers is very small. To accelerate production of progressive and large-scale farmers, more vigorous private service providers have to be established. The 01.17 Enhancement of private sector agro-input providers project aims at creating a favorable business environment for agro-input providers. To increase number of domestic private sector agro-input providers, the project will provide training to potential and existing agro-input providers on how to start and operate their business and how to use fertilisers and pesticides.

Access to timely and adequate tractor hire services is also crucial for progressive and large-scale farmers to maintain and expand their farm land. The 01.18 Enhancement of tractor hire service providers project will assist private tractor service providers through training on tractor maintenance and repair and proper tractor use. Linkages between tractor owners and spare parts dealers will be strengthened. Tractor service provider associations/cooperatives will also be established. Simultaneously, the 01.19 Tractor operator training project will train tractor operators. The limited numbers of tractor operators is one of the major challenges to

promote tractor utilisation. Operation standards, manuals for tractor operation and guidelines for environmental impacts will be developed.

### ***Urban and peri-urban vegetable production***

Urban and peri-urban agriculture (UPA) is a largely untapped source of employment and income. UPA has the potential to improve the food security and nutrition of disadvantaged urban residents. The 01.20 Urban and peri-urban vegetable production and marketing project will increase producers' income by selling vegetables at urban markets and will increase both production and consumption levels of vegetables in urban and peri-urban areas. Producers will increase their income, and hence be more resilient against external shocks.

### ***Research and extension***

In South Sudan there are only two functioning crop related government research centres.<sup>30</sup> Only minimal basic research activities (e.g. seed multiplication, variety testing and testing disease tolerance) are being conducted and research results are limited. Research activities are hindered by limited research skills, and research equipment and facilities. The 01.24 Development of research capacity project will strengthen the capacity of government agricultural research by providing training to researchers and research assistants and establishing linkages with international research institutes and universities in South Sudan. Concurrently, the 01.23 Development of research institution infrastructure project will support the construction of appropriate facilities for research activities.

The 01.25 Extension system reform and efficient service delivery project will establish a more effective agricultural extension system through consolidating AEOs, Community Development Officers (CDOs) and Cooperative Officers (COs) and their duties; it will deploy them to appropriate locations (primarily to counties and payams).

### ***Educational institutions***

Vocational training can play an important role for a broad range of people to acquire practical skills which can be used immediately. It is more accessible and more reasonably priced than universities and existing agricultural training centres. The 01.27 Establishment and enhancement of agricultural vocational institutions project aims to enhance the variety and quality of available courses at existing vocational training centres and establish a new vocational training centre.

There are only four universities offering courses related to the crop subsector.<sup>31</sup> The 01.26 Establishment and enhancement of national higher educational institutions for agriculture project will enhance the quality and availability of agricultural training and education at these institutions by improving teaching staff, facilities and equipment. The project will also support the establishment of a new higher educational institution in Yambio and revive the former Yambio Institute of Agriculture.

### ***Small and medium-scale irrigation development***

Production of crops is greatly affected by rain volume and patterns since there are a limited number of irrigation schemes. The Greenbelt Zone has the most potential for small-scale irrigation development due to the existence of small wetlands in valleys and many small streams. Medium-scale irrigation is also possible in the areas identified by the Irrigation Development Master Plan (IDMP). The contents of the small and medium-scale irrigation development project will be developed based on the result of IDMP.

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<sup>30</sup> Annex IV. Situation Analysis Report 2013/2015. Section 10.8.1.

<sup>31</sup> Annex IV. Situation Analysis Report 2013/2015. Section 5.5.4.1.

#### *2.2.4.4 Agriculture transformation*

##### ***Facilitation of cash crop production for export and longer value chains***

High value cash crop production and their processing and export will play a significant role to realise agriculture transformation. A relatively large investment is necessary to establish large and medium-scale farms for export crop production. The 01.28 Private sector investment project will develop a favourable environment for private investors by providing agri-business information on investment opportunities and facilitating private sector investment targeting large scale commercial investors and progressive farmers. Also direct support to farmers to produce high value crops will be addressed in the 01.22 Fruit and nut production project and 01.21 Sesame production project through strengthening farmer based organisation (FBOs) and conducting technical training on production skills, pests and diseases, postharvest handling and marketing.

##### ***Pest and disease control***

Although damage by pests and diseases is serious, extension services related to plant protection (e.g. diagnosis and protection measures such as the application of pesticides) are not provided by the government due to limited capacity and budget. The 01.29 National crop pest and disease control project will provide effective pest and disease control services to enable farmers to reduce crop losses, grow more food and improve quality. The project will introduce the existing model of "Plant-wise plant clinics" which provide advice on demand, tailored to the farmer's individual need. The clinics are made accessible to farmers by holding them on a regular basis in local markets etc.

##### ***Phytosanitary***

There is no functional phytosanitary system in South Sudan. Quarantine enforcement at air and border posts is minimal due to limited human resources, and technical ability to prevent the entry of pests and diseases from neighbouring countries. Establishment of a functional phytosanitary system is essential to promote export crop production so as to realise agricultural transformation. The 01.31 Establishment of a national phytosanitary system project will support the establishment of phytosanitary and pesticide regulations and their enforcement; strengthen the phytosanitary service; and, enhance private sector performance and compliance. The necessary infrastructure for a phytosanitary system (e.g. airport quarantine offices and border posts with equipment and pest and disease diagnostic laboratory facilities) will be constructed in the 01.30 National phytosanitary infrastructure project.

##### ***Quality standardisation and control***

Currently, there are no clear national standards for crop products in South Sudan. The size and quality of crop products vary by producers and markets and consumers do not always have access to safe products (pesticide residues). To remedy this, both in South Sudan and for export, it is necessary to develop a regulatory framework for quality standards for crop products and implement quality control of these standards. The 01.32 Quality standards and quality control for agricultural products project will develop quality standards and enforcement mechanisms.

#### *2.2.4.5 Institutional development*

While some policies related to crop production were approved by the National Legislative Assembly, others are still pending approval. Most crop related laws and regulations are not yet prepared due to the limited capacity of the Ministry of Agriculture, Forestry, Cooperative and Rural Development (MAFCRD). It is essential to prepare bills and enact laws and regulations in order to achieve agriculture development.

The 01.34 Establishment of firm legislative framework project establishes a firm and comprehensive legislative framework for the crop subsector. After identifying gaps in the

existing policies, laws and regulations, the project will support MAFCRD in developing the necessary legislation. It will also harmonise (as far as possible) legislation at national, state and local levels.

After a legislative framework is in place, the 01.35 Enhancement of laws and regulations enforcement project will enhance enforcement mechanisms for laws and regulations, based on the current staffing and capacity of MAFCRD.

### 2.2.5 Implementation priorities

Due to budget constraints and limited human resources all projects will not be implemented at the same time. The IPS shows expected project commencement dates; however, it will have to be adjusted based on available human and financial resources. Table 2-1 shows project implementation priorities. High priority projects should be implemented immediately since vulnerable farmers in rural areas will directly benefit. Medium priority projects are also important to build a base for agriculture development. These projects will be implemented concurrently with the high priority projects if resources are available. Since longer term projects require a relatively large investment, these projects will be implemented as funds become available.

**Table 2-2: Crop development projects sequencing**

Category	CAMP projects
High Priority	01.01 IDPs and returnees settlement/resettlement support project 01.02 Quality seed production project 01.03 Subsistence farmer sorghum production project 01.04 Subsistence farmer maize production project 01.05 Subsistence farmer rice production project 01.06 Subsistence farmer vegetable and fruit production project 01.07 Subsistence farmer cassava production and value addition project 01.08 Subsistence farmer peas and beans production project 01.09 Subsistence farmer groundnut production and value addition project 01.11 Promotion of integrated farming for risk reduction project 01.12 Farmers organisation support project 01.14 Farmers and pastoralists conflict resolution project 01.15 Strengthening of extension service delivery project 01.16 Strengthening and establishment of training institution infrastructure project 01.20 Urban and peri-urban vegetable production and marketing project 01.29 National crop pest and disease control project 01.34 Establishment of firm legislative framework project 01.35 Enhancement of laws and regulations enforcement project
Medium Priority	01.10 Enhancement of animal power utilisation project 01.13 Promotion of market oriented farming project 01.17 Enhancement of private sector agro-input providers project 01.18 Enhancement of tractor hire service providers project 01.19 Tractor operator training project 01.21 Sesame production project 01.22 Fruit and nut production project 01.23 Development of research institution infrastructure project 01.24 Development of research capacity project 01.25 Extension system reform and efficient service delivery project 01.26 Establishment and enhancement of national higher educational institutions for agriculture project 01.27 Establishment and enhancement of agricultural vocational institutions project 01.28 Private sector investment project
Longer term	01.30 National phytosanitary infrastructure project 01.31 Establishment of a national phytosanitary system project 01.32 Quality standards and quality control for agricultural products project 01.33 Tractor assembly plant establishment support project

### 2.2.5.1 High priority

High priority projects have to contribute with quick results to improving food and nutrition security of vulnerable people in rural areas, such as subsistence farmers, IDPs and returnees. In addition, the establishment of a legislative framework and its enforcement has to be high priority since so few laws and regulations exist.

#### ***Direct support to subsistence farmers and IDPs/returnees***

Food and nutrition insecurity of subsistence farmers and IDPs/returnees must be addressed immediately. Projects related to staple food production should start as soon as possible. The 01.01 IDPs and returnees settlement/resettlement support project will specifically support IDPs and returnees. These projects are expected to have quick, direct and large positive impacts to improve food and nutrition security conditions.

#### ***Necessary services for subsistence farmers***

Skills development for subsistence farmers has to be conducted early in CAMP implementation. To effectively upgrade the skills of subsistence farmers, government and private (e.g. NGOs) extension services should be strengthened immediately. Not only AEOs and NGO staff, but also CBEWs, will be trained to deliver services to farmers. Concurrently, other necessary services for subsistence farmers, such as pest and disease control measures and accessible quality seeds, have to be delivered for further improvement of food and nutrition security.

#### ***Mitigation of risks***

Conflicts between farmers and pastoralists and among pastoralists are a serious and common risk. Some farmers have become IDPs to avoid serious conflicts with armed pastoralists. Also due to the recent erratic rainfall patterns, risks of crop failure are increasing. Mitigation measures for these risks should be put in place. The 01.14 Farmers and pastoralists conflict resolution project and 01.11 Promotion of integrated farming for risk reduction project will be start early in CAMP implementation.

#### ***Training***

Only one crop related government training institute, Crop Training Centre Yei (CTC Yei), is functional in South Sudan.<sup>32</sup> The demand for training of AEOs, NGO staff and farmers is extremely high; there is an urgent need to strengthen the existing training centre and develop new institutions. A high priority component of 01.16 Strengthening and establishment of training institution infrastructure project will be to improve existing training courses and materials at CTC Yei. Then, rehabilitation/upgrading of CTC Yei and construction of new centres in strategic places (e.g. one centre in each livelihood zone) will have to be considered based on funding availability.

#### ***Farmer organisations***

To vitalise individual subsistence farmers' activities formation of FBOs, association and cooperative and strengthening of their functions are quite important. Facilitating these organisations to access to public and private extension services, micro credit schemes and potential market information will create positive impacts to subsistence farmers.

#### ***Laws and regulations***

The establishment and enforcement of laws and regulations is one of the most urgent matters to be addressed during the early stage of CAMP implementation. Although policy making has been proceeding, most crop related laws and regulations are not yet drafted. Without laws and regulations, implementation of many projects listed in the IPS will be much more difficult. Private investors will hesitate to invest due to unclear business registration

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<sup>32</sup> Annex IV. Situation Analysis Report 2013/2015. Section 5.5.2.



and land acquisition processes, no regulations for intellectual property rights, no restrictions of agrichemical use and an unclear taxation system.

#### *2.2.5.2 Medium priority*

Medium priority projects will contribute to establishing the foundation for further agricultural development. To build knowledge in the agriculture sector, the improvement of extension, research and education will continue. Commercial farmers and private investors will be supported to develop a more commercialised and export oriented farming so as to contribute to agriculture sector transformation.

#### ***Extension and research***

Drastic reform of existing extension services is needed. AEOs, CDOs and COs have similar functions. The 01.25 Extension system reform and efficient service delivery project will redefine their roles and promote a professional extension services cadre.

Limited research is being conducted in two research centres in the country. For long-term agriculture development it is necessary to strengthen research functions so as research relevant to South Sudan is carried out (crop statistical data, identify/develop suitable varieties, pest and disease control etc.). The 01.23 Development of research institution infrastructure project and 01.24 Development of research capacity project need more time and financial resources and will start after achieving food and nutrition security for subsistence farmers, and will lay the foundation for economic growth and sector transformation.

#### ***Education***

For further agriculture development, higher educational institutions (e.g. universities and colleges) and vocational institutions need to be improved. Upgrading the skills and knowledge in the agriculture sector is not an immediate task but is important for long-term development. The 01.27 Establishment and enhancement of agricultural vocational institutions project and 01.26 Establishment and enhancement of national higher educational institutions for agriculture project are expected to begin after the food security improves.

#### ***Services for commercial farmers***

A favourable environment for the private sector will be developed to facilitate agriculture investment by the private sector in activities such as high value crop production, tractor hire services, agro-inputs etc. This should start as food and nutrition security is achieved.

#### *2.2.5.3 Longer term*

These are projects that require many years for implementation and that address less immediate needs; they should start as financial and human resources become available.

There is no functional phytosanitary system, but, for long term agricultural development, it is important to control pests and diseases. Quality standards and quality control will be important for accelerating the export of agricultural products; export markets will be more demanding.

## **2.3 Livestock subsector**

### **2.3.1 Overview**

South Sudan is located in a region with the greatest concentration of livestock resources in Africa. Moreover, this region is a gate way to the Middle East and northern Africa which are home to the largest live animal trade in the world.<sup>33</sup> The trade is composed of both an informal and formal market that finds livestock moving through South Sudan into surrounding countries. The sector is predominately comprised of pastoral and agro-pastoral livestock production systems, whose contribution to the economy is significant but challenging to measure since it contributes both socially and economically.

The livestock industry is largely poorly developed in modern production terms. However, there is great potential for this industry to improve food security, livelihood and income generation, economic transformation with industrial growth, exports and job creation leading to significant increases in GDP.

Currently most hides and skins are not collected and are treated as a waste product; with minimal intervention the value can be obtained and revenue generated. In poultry due to the short generation times, simple interventions can lead to improved nutrition status and fast income generation. Likewise, the adoption of new technology in the honey industry can significantly improve production leading to immediate income gains. Furthermore, education concerning social versus economic value of the large and small ruminant industry can greatly improve production leading to increased incomes and nutrition. All four of these value chains have both immediate and long term potential.

As the subsector matures, various constraints will be addressed and new technologies adopted and the pace of growth will increase in the medium and long term. Moreover, as production increases and disease problems are addressed, products can flow locally, nationally, regionally and eventually internationally creating livelihoods and increasing employment and incomes. The diversity of products and potential is large.

### **2.3.2 Key players**

There are several stakeholders in the livestock subsector which play an important role now and in the future. Some have the potential to immediately transform the industry such as hides and skins, poultry, bee workers and live large and small ruminant subsistence and commercial pastoralists. To capture the potential, awareness must be created and this is best accomplished through development producer associations with technical assistance coming from public sector extension services. There is an important role for the government to improve the enabling environment and the involvement in research and training institutions; functioning and well- funded state and county extension services are also critical.

#### **2.3.2.1 Subsistence pastoralists**

Subsistence pastoralists are the major producers in the livestock industry. These are producers that raise cattle, sheep, and goats and graze them on rangeland, pastures, and crop residues. Some also obtain milk from cattle, sheep, and goats in conjunction with meat production. Some also have household subsistence production from poultry. In certain regions of South Sudan beekeeping also provides a form of household food security and income from honey. These subsistence key players are in need of the most development help in terms of production assistance (extension services and demonstration farms), access to rangelands free from conflicts, safe water access points; auction facilities for products; marketing help; animal health services; access to financial services; and established infrastructure in order to transport their products to sell or barter. Subsistence pastoralists

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<sup>33</sup> Annex IV. Situation Analysis Report 2013/2015. Section11.1.

need immediate development help in order to firstly provide food security for their families and secondly to produce surplus in order to sell for cash income.

#### *2.3.2.2 Commercial pastoralists*

Commercial pastoralists are those producers with large herds of ruminant livestock, large flocks of poultry for meat and egg production, and apiarists who have established bee hives in many locations for large scale production of honey. Commercial pastoralists will benefit from production assistance (provided by extension services and livestock research centres); access to terminal auction facilities; access to sanitary harvest (slaughter) facilities; land and grazing tenure and security; forage crop production and feed mills; financial services; marketing assistance (trade shows, branding, packaging); and competent animal health service providers.

#### *2.3.2.3 Commercial traders and exporters*

Commercial traders and exporters include live animal dealers and traders who purchase livestock and poultry for the purpose of selling to urban markets, restaurants, hotels, or even exporting to regional countries. These key players in the industry are often called “middlemen”. They have the resources and capacity to purchase livestock, honey and poultry from subsistence and commercial producers and then sell to wholesale or retail markets at a profit. Commercial traders and exporters will benefit from implemented national and state policies and a transparent regulatory and enforcement framework. They will further benefit from improved primary, secondary, and terminal auction facilities. Improved roads and border crossings will help exporters transport livestock and products to neighbouring countries in a more efficient and cost effective manner.

#### *2.3.2.4 Commercial processors*

Commercial processors own and operate harvest facilities, feed mills, hide and skin tanneries, and processing facilities for milk and dairy products, and poultry meat and eggs. These private sector processors are essential in getting livestock industry products from the producer to the consumers and to overseas buyers.

#### *2.3.2.5 Government*

The Ministry of Livestock and Fisheries Industries (MLFI) must play a key role in the future of the livestock industry. However, there are major areas of concern that need to be addressed by the ministry and national and local governments. Corruption and non-transparency of activities have to cease before progress can be made. MFLI must draft, pass and implement policies and laws that provide a framework for regulation, enforcement and most importantly, an atmosphere of trust where private investors feel comfortable and safe investing in agriculture in South Sudan. MLFI has the responsibility to create an enabling environment for the private sector to freely and economically conduct business.

Public extension services are normally the only source of non-biased, research based information for livestock producers. Extension services were essential to developing the United States into one of the “bread baskets” of the world. MFLI must play an important role in developing a well-funded and competent national, state, and county extension system, playing a leading role in disease surveillance, land tenure and grazing security, animal and feed diagnostic laboratories, and sanitary and health inspection services.

#### *2.3.2.6 Producer associations*

Producer associations play an important role in supporting small agricultural producers and marginalized groups such as young people and women. Associations offer small agricultural producers opportunities and a wide range of services, including improved access to markets, natural resources (i.e. water and grazing cooperatives), information, communications,

technologies, credit, training and warehouses. They also facilitate smallholder producer participation in the following areas:

- decision-making at all levels
- support in securing land-use rights
- better terms for engagement in contract farming
- lower prices for agricultural inputs such as veterinary drugs, feed and equipment.

Through this support, smallholder producers can secure their livelihoods and play a greater role in meeting the growing demand for food on local, national and international markets, thus contributing to poverty alleviation, food security and the eradication of hunger.

### **2.3.3 Overview of project rationale**

Five main livestock subsector value chains exist: live animals and red meat, poultry, dairy, hides and skins, and honey. There are immediate opportunities available in each of these value chains. Table 2-3 provides an overview of opportunities that exist within each value chain along with the challenges faced, followed by project profiles that have been written to address the challenges.

**Table 2-3: Livestock: opportunities, challenges, development themes and projects**

<b>Opportunities</b>
<b>Challenges and constraints</b>
<b>Development Themes</b>
<b>Projects</b>
<p><b>Live large and small ruminants (cattle, sheep and goats) and red meat: Large livestock population, millions of hectares of rangeland for grazing, large base of experienced producers, linkages with crop sector</b></p> <ul style="list-style-type: none"> <li>• Inconsistent data</li> <li>• Poor service delivery (extension services, training institutions)</li> <li>• Weak policy, legal, institutional and regulatory framework</li> <li>• Conflicts due to grazing rights and water accessibility</li> <li>• Inadequate infrastructure (harvest facilities, auction facilities, diagnostic laboratories)</li> <li>• Poor animal health services</li> <li>• Lack of organized producer associations</li> <li>• Low production and productivity</li> <li>• Lack of research institutions for obtaining increased red meat production</li> </ul> <p><i>Reconstruction and recovery</i></p> <ul style="list-style-type: none"> <li>02.01 Grazing allotments and land tenure project</li> <li>02.02 Livestock census, disease surveillance and information management project</li> <li>02.03 National and state livestock policy and legal framework establishment and maintenance project</li> </ul> <p><i>Food and nutrition security</i></p> <ul style="list-style-type: none"> <li>02.05 Development of a central and regional veterinary drug stores project</li> <li>02.08 Development of water catchment and watering areas project</li> <li>02.09 Formulation of animal health and disease control plan project</li> <li>02.10 Veterinary services delivery project</li> </ul> <p><i>Economic growth and livelihood improvement</i></p> <ul style="list-style-type: none"> <li>02.17 Livestock harvest facilities improvement and management project</li> <li>02.19 Meat production and processing extension project</li> <li>02.20 Pig production extension project</li> </ul> <p><i>Agriculture sector transformation</i></p> <ul style="list-style-type: none"> <li>02.23 Enhancement of livestock producer associations project</li> <li>02.24 Rangeland management project</li> </ul> <p><i>Institutional development</i></p> <ul style="list-style-type: none"> <li>02.26 Development of livestock extension systems including CAHWs project</li> </ul>
<p><b>Poultry: High demand for poultry meat and eggs due to rapidly growing urban centres and existence of regional hatcheries</b></p> <ul style="list-style-type: none"> <li>• Low production and productivity</li> <li>• Weak marketing</li> </ul>

**Table 2-3: Livestock: opportunities, challenges, development themes and projects (cont.)**

Opportunities
Challenges and constraints
Development Themes
Projects
<ul style="list-style-type: none"> <li>· Poor service delivery (extension services and training institutions)</li> <li>· Lack of organized producer associations</li> <li>· Lack of commercial feed mills</li> <li>· Lack of organized producer associations</li> </ul>
<p><i>Food and nutrition security</i></p> <ul style="list-style-type: none"> <li>02.05 Development of a central and regional drug stores project</li> <li>02.07 Development of livestock marketing project</li> </ul> <p><i>Economic growth and livelihood improvement</i></p> <ul style="list-style-type: none"> <li>02.13 Development of feed mills project</li> <li>02.21 Poultry production and processing extension project</li> </ul> <p><i>Agriculture sector transformation</i></p> <ul style="list-style-type: none"> <li>02.23 Enhancement of livestock producers association project</li> </ul> <p><i>Institutional development</i></p> <ul style="list-style-type: none"> <li>02.26 Development of livestock extension systems including CAHWs project</li> </ul>
<p><b>Dairy: High milk demand, therefore business opportunity; major production and processing gaps can be closed with relatively low level technologies; emerging peri-urban 'permanent' cattle camps provide for an organized milk industry.</b></p> <ul style="list-style-type: none"> <li>· Low production and productivity</li> <li>· Unsanitary milking procedures and dairy product processing</li> <li>· Lack of forage crops for increased nutrition and production</li> <li>· Poor service delivery (extension services and training institutions)</li> <li>· Poor animal health services</li> <li>· Lack of organized producer associations</li> </ul> <p><i>Food and nutrition security</i></p> <ul style="list-style-type: none"> <li>02.05 Development of a central and regional drug stores project</li> <li>02.10 Veterinary services delivery project</li> </ul> <p><i>Economic growth and livelihood improvement</i></p> <ul style="list-style-type: none"> <li>02.11 Dairy production and processing extension project</li> <li>02.14 Forage crops production project</li> </ul> <p><i>Agriculture sector transformation</i></p> <ul style="list-style-type: none"> <li>02.23 Enhancement of livestock producer associations project</li> </ul> <p><i>Institutional development</i></p> <ul style="list-style-type: none"> <li>02.26 Development of livestock extension systems including community animal health workers (CAHWs)</li> </ul>
<p><b>Hides and skins: A product that is available in large quantities but not being utilized, immediate opportunities for business income, high demand in regional countries.</b></p> <ul style="list-style-type: none"> <li>· Poor service delivery (extension services)</li> <li>· Lack of training in tanning hides and skins</li> <li>· Weak market system</li> </ul> <p><i>Food and nutrition security</i></p> <ul style="list-style-type: none"> <li>02.07 Development of livestock marketing project</li> </ul> <p><i>Economic growth and livelihood improvement</i></p> <ul style="list-style-type: none"> <li>02.15 Hides and skins processing extension project</li> </ul> <p><i>Agriculture sector transformation</i></p> <ul style="list-style-type: none"> <li>02.23 Enhancement of livestock producer associations project</li> </ul> <p><i>Institutional development</i></p> <ul style="list-style-type: none"> <li>02.26 Development of livestock extension systems including community animal health workers (CAHWs)</li> </ul>
<p><b>Bees: Easy industry for women and youth to participate in, low capital investment, high demand for honey</b></p> <ul style="list-style-type: none"> <li>· Poor service delivery (extension services)</li> <li>· Lack of training</li> <li>· Weak market system</li> <li>· Lack of organized producer associations</li> </ul> <p><i>Food and nutrition security</i></p> <ul style="list-style-type: none"> <li>02.07 Development of livestock marketing project</li> </ul> <p><i>Economic growth and livelihood improvement</i></p> <ul style="list-style-type: none"> <li>02.11 Beekeeping extension project</li> </ul> <p><i>Agriculture sector transformation</i></p> <ul style="list-style-type: none"> <li>02.23 Enhancement of livestock producer associations project</li> </ul> <p><i>Institutional development</i></p> <ul style="list-style-type: none"> <li>02.26 Development of livestock extension systems including community animal health workers (CAHWs)</li> </ul>

**Figure 2-2: Investment planning space (IPS) for the livestock subsector**

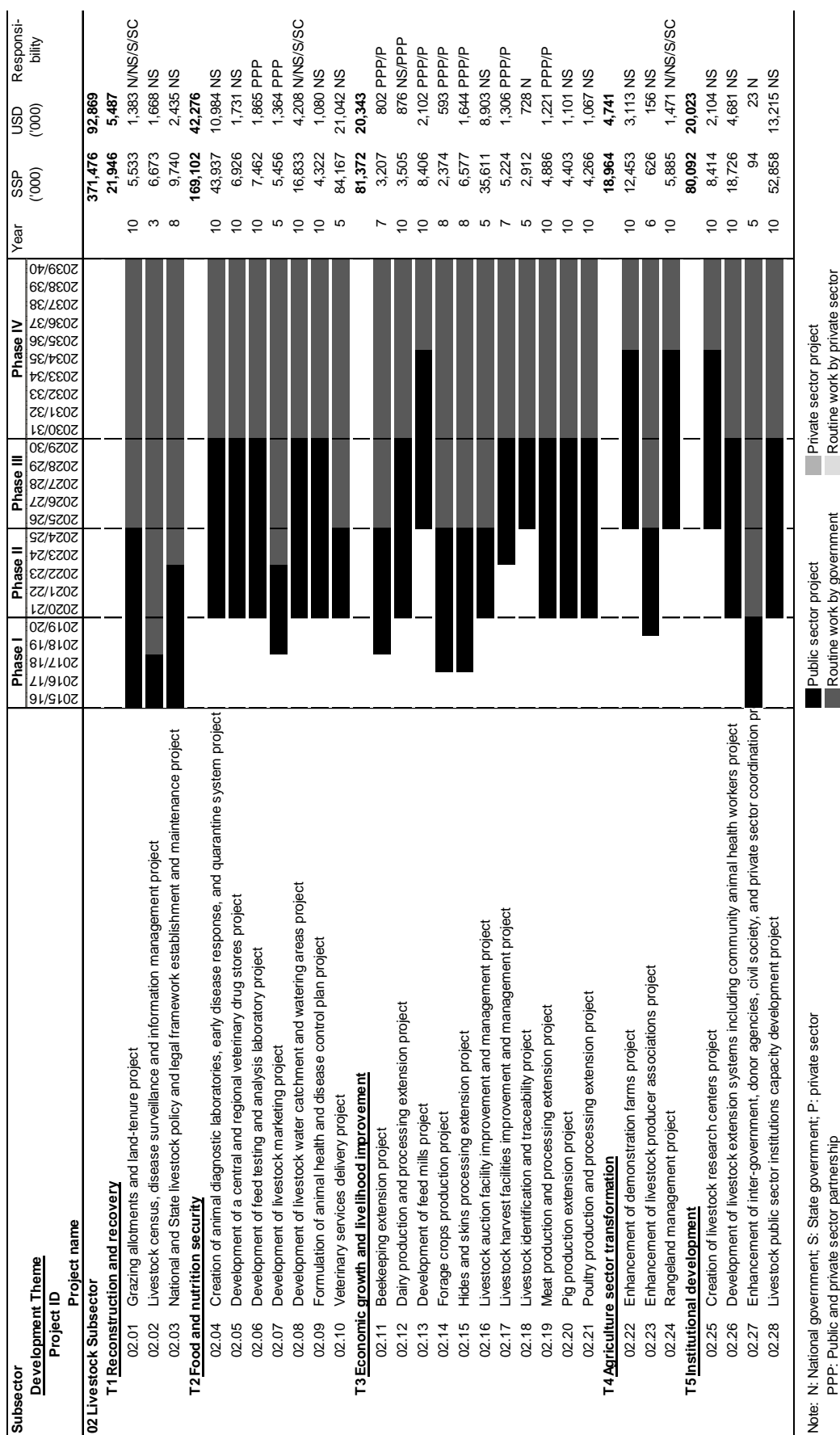


Figure 2-2 shows the investment planning space of the livestock subsector, which describes development themes, project titles, estimated project costs and the sequence of project implementations according to project priorities and the funding availability.

### **2.3.4 Justification of projects by development theme**

Livestock will positively impact the five development themes immediately and in the future.

#### *2.3.4.1 Reconstruction and recovery*

##### **Legal framework**

The livestock industry cannot progress unless the government drafts, passes, and implements policies and laws that allow regulation and enforcement so as to protect producers and, most importantly, consumers. Producers must feel safe to raise livestock without the threat of insecurity. They need to know the government has provided enforceable laws during the peace and recovery process that protect them and allow them to flourish economically. Consumers need to feel confident that the government has put into place sanitation and health laws and an inspection system that ensures the food they are eating is not contaminated. Land tenure will be essential for security. Land owners returning after the recent conflict must be able to claim the land they own. Pastoralists must have properly demarcated allotments of rangeland where they can graze their herds of livestock. The 02.01 Grazing allotments and land tenure project and the 02.03 National and state livestock policy and legal framework establishment and maintenance project address these issues. The anticipated impacts from these projects include: a standardized, internationally accredited livestock policy and regulations, plus land tenure and grazing policies with a transparent enforcement system and a transparent system for input and change.

##### **Livestock and disease census**

A major constraint is the absence of accurate numbers of the population of ruminant livestock and poultry in South Sudan.<sup>34</sup> There is also no disease surveillance system. With the prolonged conflicts in recent history livestock have been scattered across South Sudan and accurate numbers need to be obtained for the recovery process. To address issues such as identification, vaccination and disease control and monitoring, reliable data is needed. Moreover, to develop proper disease surveillance systems it is critical to have livestock population data for each state. The information is also needed for strategic development and investment in the various regions. Disease outbreaks in livestock are devastating to a national economy and can quickly reduce pastoralists to extreme poverty. The 02.02 Livestock census, disease surveillance, and information management project will address these important issues. The output should be a reliable, secure database of livestock and poultry numbers and diseases that can be used in basic economic calculations and predictions.

#### *2.3.4.2 Food and nutrition security*

Limited knowledge concerning new technologies, proper animal health and husbandry means that the productivity of the subsector remains low. Most producers are using old technologies and production methods. There is a large livestock population, millions of hectares of prime rangeland for grazing, immediate linkages with the crop sector, high demand for poultry and eggs, high milk demand, already established peri-urban 'permanent' cattle camps, high demand and production of honey, and in the case of hides and skins, products that are available in large quantities but not being utilized.<sup>35</sup>

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<sup>34</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11-1.

<sup>35</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11-2,11-3.

### ***Diagnostic laboratories***

The 02.04 Creation of animal diagnostic laboratories, early disease response, and quarantine system project will enable veterinarians in the country to correctly diagnose a disease outbreak so that the proper vaccinations can be administered, instead of just administering a blanket vaccination that may or may not work on a particular disease strain, such as for foot and mouth disease. The 02.06 Development of feed testing and analysis laboratory project will test batches of feed for aflatoxins and other contaminants that can hurt or kill poultry, livestock, and fish. Diagnostic laboratories for both disease and feed are essential for a country's food security.

### ***Animal health***

The 02.09 Formulation of animal health and disease control plan project outlines a national disease outbreak control plan that involves state and county organizations. Government organizations will be able to quickly identify a disease outbreak, isolate it, quarantine the area, and then work on eradication. A livestock industry must have a chain of input supply stores (with refrigeration capability) where producers can purchase vaccinations, supplies (ear tags, handling equipment, etc.), feed supplements, and vitamins/minerals. Currently in South Sudan these type of stores are limited to Juba and even then are poorly stocked with the necessary medicines and supplies.<sup>36</sup> The 02.05 Development of a central and regional veterinary drug stores project creates a central public drug store which provides certified drugs to private sector livestock input stores. In addition to outlets that sell quality medicines and vaccinations for livestock and poultry, competent animal health delivery services are needed. A nation's food security, especially with livestock, is highly correlated with their ability to treat diseases. The 02.10 Veterinary services delivery project provides an in-depth way forward for competent livestock medical care in South Sudan.

### ***Water access***

The 02.08 Development of livestock water catchment and watering areas project is important in addressing the constraint of inconsistent watering areas for livestock producers. Water and the lack of it during the dry season is one of the nation's worst causes of conflict; herders take their animals to areas where water still exists in the dry season which often crosses tribal boundaries sparking conflict. Developing livestock water catchment areas and access points in places where land goes dry will help solve much of this type of conflict.<sup>37</sup>

### ***Marketing***

Commercial agriculture production will not continue if farmers cannot make money. The 02.07 Development of livestock marketing project addresses this through a marketing project that enhances and promotes the myriad livestock products being produced. This includes technical assistance to producer associations and the implementation of national agricultural tradeshows. Food and nutrition security is stabilized through farmers earning enough income to support their families and through an agricultural industry that is attractive to younger generations wanting to pursue agricultural careers and farming. Marketing is key in generating income to make agriculture attractive.

#### ***2.3.4.3 Economic growth and livelihood improvement***

##### ***Livestock, dairy, poultry, bee production***

South Sudan has millions of hectares of prime rangeland, one of the highest populations of livestock in Africa, and a countrywide high demand for livestock products. There are major constraints however that need to be overcome in order for the opportunities and potential to be realized. There is poor service delivery and technical advice (extension services and training institutions), no feed mills, poorly organized producer associations, unsanitary meat

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<sup>36</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11.9.3.

<sup>37</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11.10.1.



and milk production techniques, poor functioning auction facilities, and no attention given to pig production potential.<sup>38</sup> Project profiles developed to promote economic growth and livelihood improvement include a combination of technical assistance to enhance production and cover also business and marketing arenas. Through various project profiles economic and income growth is addressed for beekeeping; dairy; feed mills; forage crop production; hides and skins; auction facilities; harvest facilities; livestock identification and traceability systems; red meat (including pork), and poultry production.

#### *2.3.4.4 Agriculture sector transformation*

##### ***Improved technology***

As the livestock industry begins to grow and production starts to increase, producers will have a renewed interest in better and more modern production and marketing techniques. There is the old saying, “seeing is believing”; the 02.22 Enhancement of demonstration farms project and 02.24 Rangeland management project will demonstrate new techniques to producers, who will see first-hand the benefits of utilizing new technologies such as genetic improvement of livestock, proper grazing techniques, and the introduction of improved grasses and forbs<sup>39</sup> for neglected or degraded rangeland areas.

##### ***Producer associations***

The 02.23 Enhancement of livestock producer associations project will promote the creation of producer associations, where they will share new technologies and have a greater volume of livestock products to sell. Members of these associations will start the transformation from individual, subsistence type producers to true business women and men to become a collective and strong force for food supply and income generation.

#### *2.3.4.5 Institutional development*

As the livestock industry grows it is important to have functional public sector institutions in place to provide oversight and technical assistance. Absence of feeder roads, communication and information systems, and a constant and reliable source of electricity has a negative effect on the industry. Moreover, the lack of proper water along migratory routes or during the dry seasons has led to conflicts between pastoralist and sedentary populations.<sup>40</sup> Furthermore, poor information systems have resulted in the concentration of power with certain traders and middle men, not allowing true pricing information to reach producers, and affecting profitability. Likewise, inadequate communication systems has inhibited the use of mobile technologies such as market information and mobile money. Finally, the absence of auction facilities, cold chain access, and poor technical assistance services (extension services and training institutions), and proper harvest facilities slows growth of the subsector.

##### ***Extension and research***

Project profiles were developed that relate to the theme of institutional development and address the constraints found under this theme. The 02.25 Creation of livestock research centres project includes livestock research centres which, as agricultural production improves in South Sudan, will be needed to further improve production and the development of modern technologies that are specific to agriculture and livestock production in South Sudan. Currently there are no active livestock research projects being undertaken in the country and all new technologies introduced are from regional or third country research.<sup>41</sup> Once in-country research has begun, the results need to be taken to the people by active and competent livestock extension services.

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<sup>38</sup> Annex IV. Situation Analysis Report 2013/2015. Sections 11-4-11-9.

<sup>39</sup> Flowering plants used as forage.

<sup>40</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11.10.1.

<sup>41</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11.9.2.

Technical assistance, help in forming producer associations, marketing of agricultural products, recruitment of students into agricultural universities all can be accomplished through a livestock extension service. Currently extension services are taking place in the form of CAHW workers.<sup>42</sup> However a more formalized system is needed at the national, state, and county level. This more formalized system is outlined in the 02.26 Development of livestock extension systems including community animal health workers (CAHWs) project.

### **Education**

Existing universities and training institutions in South Sudan lack infrastructure, competent faculty, research capability, and consistent curricula.<sup>43</sup> The capacity building of existing universities and training institutions is addressed in the 02.28 Livestock public sector institutions capacity development project.

A current major constraint is that ministry and responsible entities are not briefed on all technical assistance activities (particularly those done through NGO's.) which sometimes only concentrate on certain geographic locations.<sup>44</sup> Some NGOs provide misleading training. Better coordination along with standardized training material is needed. The 02.27 Enhancement of inter-government, donor agencies, civil society, and private sector coordination project provides standardized training material and promotes better coordination between government, donor agencies, civil society, and the private sector.

### **2.3.5 Implementation priorities**

In a perfect world all the project profiles that have been developed would be funded and started at the same time. However there are funding constraints and some project profiles have a higher priority for implementation scheduling than others. Table 2-4 provides an overview summary of those project profiles that have high, medium, and longer term for implementation.

Project profiles were developed as the intervention tools that are necessary to remove the constraints listed in Table 2-3, though the project profiles have to retain flexibility in their implementation. Scheduling of these projects will take place according to priority with some project interventions needing to take place earlier to provide a foundation for the future success of subsequent projects.

#### **2.3.5.1 High Priority**

High priority projects are interventions to address constraints that must be first removed in order for future development to occur. For example, the legal and regulatory framework must be in place so that farmers feel safe and confident that the government will be a protection instead of hindrance as they start and expand their businesses. Funding priority is key, due to the unstable economy of South Sudan. Immediate impacts, foundation building, and low budgetary inputs combine to place the following projects into the high priority category.

#### **Livestock and disease census**

The 02.02 Livestock census, disease surveillance, early disease response, and quarantine system project will perform a rapid census of the livestock and poultry industry, as well as livestock diseases and their location, in order to quantify the number of each species of livestock and their diseases. This will allow for a better economic understanding of the industry and develop a baseline for monitoring, while allowing officials a more accurate means of calculating the potential economic benefit. Furthermore, to capitalize on the census project, the relatively inexpensive 02.09 Formulation of animal health and disease

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<sup>42</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11.9.1.

<sup>43</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11.4.3.

<sup>44</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11.4.4.

control plan project will have huge economic benefits if done correctly. Animal health and disease plans will prevent devastating losses to a rapidly growing livestock industry.

**Table 2-4: Livestock development projects sequencing**

<b>Category</b>	<b>CAMP Project</b>
High priority	02.01 Grazing allotments and land-tenure project 02.02 Livestock census, disease surveillance, early disease response, and quarantine system project 02.03 National and State livestock policy and legal framework establishment and maintenance project 02.07 Development of livestock marketing project 02.09 Formulation of animal health and disease control plan project 02.23 Enhancement of livestock producer associations project
Medium priority	02.04 Creation of animal diagnostic laboratories, early disease response, and quarantine system project 02.05 Development of a central and regional veterinary drug stores project 02.06 Development of feed testing and analysis laboratory project 02.10 Veterinary services delivery project 02.11 Beekeeping extension project 02.12 Dairy production and processing extension project 02.14 Forage crops production project 02.15 Hides and skins processing extension project 02.16 Livestock auction facility improvement and management project 02.17 Livestock harvest facilities improvement and management project 02.19 Meat production and processing extension project 02.20 Pig production extension project 02.21 Poultry production and processing extension project 02.26 Development of livestock extension systems project 02.27 Enhancement of inter-government, donor agencies, civil society, and private sector coordination project 02.28 Livestock public sector institutions capacity development project
Longer term	02.13 Development of feed mills project 02.18 Livestock identification and traceability project 02.22 Enhancement of demonstration farms project 02.24 Rangeland management project 02.25 Creation of livestock research centres project

### **Legal framework**

Currently, there is no single document that collates and harmonizes the various policies in the subsector into a single consolidated reference document.<sup>45</sup> Thus, there is a need to ensure compliance with the constitution of South Sudan which sets the mandate for the development of livestock and poultry resources. The 02.03 National and State livestock policy and legal framework establishment and maintenance project addresses this. In addition the 02.01 Grazing allotments and land tenure project must begin immediately to provide the legal, regulatory, and enforcement framework to eliminate security risks from land ownership and grazing.

### **Producer associations and marketing**

The relatively inexpensive 02.23 Enhancement of livestock producer associations project can provide immediate economic returns. Producer associations also make it easier for extension, international experts, donor partners, etc. to deliver technical assistance. The 02.07 Development of livestock marketing project will help realize immediate income from those products currently readily available.

<sup>45</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11.3.1.

### 2.3.5.2 Medium Priority

Medium priority projects will further build the foundation of the development of the livestock industry. The further development will involve improved production techniques; building of knowledge through extension, training, and higher education; improved animal health care and sanitary processing facilities. These projects are meant to transform the livestock industry from subsistence type production to commercial production.

#### ***Improved production techniques***

As farmers start to feel confident in government due to improved legal and regulatory framework they will start to expand their livestock, dairy, poultry, and bee inventories and production. A number of project interventions were developed to facilitate improved technology in production. These interventions will be led by the extension services and will be taught primarily through newly formed producer associations. There will be a focus on improved technology in the production of dairy products, red meat including pigs, forage crops, poultry, and honey.

#### ***Extension, training, higher education***

The goal of the 02.26 Development of livestock extension systems project is to identify CAHWs, create a national livestock extension service, incorporate a selected number of CAHWs into the extension service, update/standardize training and utilize extension services in the livestock sector. This will be done by the creation of a national livestock extension service which will provide animal production knowledge and veterinarian services to producers. In addition, existing CAHWs can become an important source of extension services, especially at the county level, in production areas as well as disease monitoring.

Local technical experts from MLFI Veterinary Science and Animal Production with assistance from international technical and educational (training) experts will work together to develop a standardized multi-level training program for livestock extension staff. The information developed will be used by all organizations designated to provide extension training. This will be a country requirement with no exceptions. The 02.27 Enhancement of inter-government, donor agencies, civil society, and private sector coordination project will create a standardized training program for livestock extension certification. Additionally this will ensure standardized training being provided across the country no matter which organization is the provider.

There are six recognized public educational and technical training centres in South Sudan which cover livestock production as part of the curriculum.<sup>46</sup> Only Marial Lou in Warrap State offers technical skills development that can be used immediately by extension workers, but the cost is prohibitive to most students and the curriculum is limited in scope. The others are focused on academic training. The 02.28 Livestock public sector institutions capacity development project addresses the immediate educational needs of the producers and workers in the livestock industry, with a secondary objective to target younger and female students. This project intervention is a medium priority due to subsistence farmers becoming commercial farmers and needing improved technological skills through education and training.

#### ***Animal health***

The 02.10 Veterinary services delivery project will develop a plan for animal health services to be delivered through a national and state extension system. The project will develop a transition plan in which animal health services are provided by the private sector on a fee basis. The public sector after the transition will focus on the control of epidemic diseases through the use of sanitary mandates, quarantine services, movement controls, compulsory

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<sup>46</sup> Annex IV. Situation Analysis Report 2013/2015. Section 11.4.3.

slaughter, disease surveillance, and vaccination control as found in the 02.04 Creation of animal diagnostic laboratories, early disease response, and quarantine systems project.

As veterinary services become privatized and diagnostic laboratories become functional the 02.05 Development of a central and regional veterinary drug stores project will create a national cold chain that will supply the much needed livestock vaccinations and livestock input supplies. Diagnostic laboratory development will include the 02.06 Development of feed testing and analysis laboratory project which will test for dangerous aflatoxin contaminants in feed being given to livestock, poultry, and fish.

### ***Sanitary processing and auction facilities***

As agricultural transformation starts to happen and economic livelihoods for livestock producers improve, there will be a great need for sanitary facilities so as to harvest livestock in a sanitary and humane way as outlined in the 02.17 Livestock harvest facilities improvement and management project. For those animals being bought and sold there will be need for improved auction facilities as described in the 02.16 Livestock auction facility improvement and management project.

### ***2.3.5.3 Longer term***

These are projects that require many years for development and need strong foundations from the previously outlined projects. While still very important, these projects are the most expensive to implement. To ensure no funds are wasted, the projects with high to medium priorities must be firmly established before investing in the longer term projects. Longer term projects include the construction of facilities such as livestock research centres and demonstration farms, livestock identification and traceability programs, development of commercial feed mills, and massive rangeland rehabilitation and management projects including construction of water catchment areas.

### ***Research and demonstration facilities***

Genetic improvement of ruminant animals, pigs, and rangeland grass and forb species will be essential to the long term sustainability of South Sudanese livestock production. This improvement is achieved through the 02.25 Creation of livestock research centres project. As success from high and medium priority projects begins to occur, these successes can be showcased at demonstration farms. The 02.22 Enhancement of demonstration farms project will remodel former demonstration farms that no longer are operating. This remodel will create working farms that utilize and demonstrate successful technologies implemented by livestock producers across South Sudan. This is a long term priority due to the expense in re-modelling buildings and procuring equipment such as tractors.

### ***Feed mills***

An indicator of the success of a country's livestock, poultry, and aquaculture industry is the number and quality of feed mills operating. Currently South Sudan has none. Feed mills provide nutritionally balanced feed supplements for livestock, poultry, and fish. Feed mills are private sector driven and are expensive to construct and sustain. High and medium priority projects must be successful, especially those covering the legal and regulatory framework, before private investors will feel safe investing in feed mill ventures.

### ***Livestock identification and traceability***

For meat and livestock to be traded internationally animals and animal products must meet traceability standards as defined by the Codex Alimentarius (International Organization and Standardization system). The 02.18 Livestock identification and traceability project outlines the adoption of an internationally accepted ID system that will allow producers in South Sudan to meet and exceed international standards. Moreover, it will provide the Directorate of Veterinary Services a system which can be used in disease monitoring and reporting.

Livestock input supply stores will have to be developed first before this project can be realized thus making it a longer term priority.

***Rangeland management***

South Sudan has vast areas of rangeland where livestock can graze. However, there are areas where grazing management has not been followed, especially during the dry season and widespread rangeland rehabilitation is needed. The 02.24 Rangeland management project focuses on large rangeland rehabilitation and management programs. This will be an expensive endeavour and thus falls into a longer term priority. In partnership with rangeland management is the 02.08 Development of livestock water catchment and watering areas project. Large portions of rangeland have no water sources during the dry season requiring pastoralists to drive their herds nearer to water, often encroaching on other tribal lands causing conflict. Water catchment areas need to be constructed in areas where water dries up so that farmers can stay on their own tribal lands throughout the year. Although this project is extremely important it is also very expensive and will require large capital inputs to construct water catchment areas, map water sources using GIS technology, and train pastoralists on how to manage water access areas.

## 2.4 Forestry subsector

### 2.4.1 Overview

#### 2.4.1.1 State of forests

The forestry subsector is described in detail in the Situation Analysis Report 2013/2015 (Annex IV) and in the Development Options Analysis 2014 (Annex III).

South Sudan is endowed with diverse natural forests and woodlands. Available information shows that out of South Sudan's total land area, some 208,157km<sup>2</sup> (33%) is covered by trees and another 257,236km<sup>2</sup> (40%) by shrubs.<sup>47,48</sup> Thus up to 73% of the country has ecosystems of legitimate interest to the forestry sector. Of this, the combination of forest reserves,<sup>49</sup> protected areas, national parks and game reserves together covers only an estimated 19,500km<sup>2</sup>, which is just over 9% of the tree-covered land area and only around 3% of the whole land area of the country. This combination of reserved forests still leaves at least 203,730km<sup>2</sup> of trees not formally protected, in addition to which there exist around 257,236km<sup>2</sup> of shrubs largely outside protected areas.

In the 1970's and 1980's the country foresaw a need to take advantage of favourable soil and rainfall conditions to establish forest plantations to complement its natural forests. The planting (largely of teak), was done within forest reserves where, prior to the civil war, the plantations covered 187,900 ha. The residual area after uncontrolled cutting during the conflict needs to be confirmed. The extreme south and southwest of South Sudan represents the sub-tropical zone where the best remaining teak plantations are found; it is also the area where, on the margins of the Congo basin, some 25,000km<sup>2</sup> of tropical moist forests remain, according to the Ministry of Agriculture's Strategic Plan 2007-2011. The zone changes relatively abruptly into savannah of rapidly diminishing tree density, which changes further into scrub and grassland where gum acacia trees are abundant. Over 5% of South Sudan is the permanent Sudd wetland which, with other flood plains, is a major safe haven for wildlife, including a great variety of migratory birds. The majority of the Sudd area has been designated a RAMSAR site.

High levels of deforestation are reported, with the long period of insecurity often blamed for uncontrolled harvesting and land clearing. However, agriculture is not yet a major threat to forests in South Sudan since cropland occupies only 3.8% of the land.<sup>50</sup> Indeed, even if government ambitions to expand this by 340% to 9.2 million ha by 2017 – some 14.3% of the land – crops will still occupy little more than half of the estimated 19,500 km<sup>2</sup> of reserved forests and woodlands. Nevertheless attention should be paid to deforestation by the expansion of crop land and to forest/woodland degradation, often caused by bush fires while clearing land, and by harvesting for fuelwood and charcoal.

#### 2.4.1.2 Importance of forests

The forest and woodland ecosystems of South Sudan play fundamentally important roles in ensuring habitability of the country. They contribute to the atmospheric carbon and oxygen cycles; to the water cycle; to protecting the land from erosion and the lakes/rivers from excessive siltation; and, to conserving the unique biological diversity of plants and animals.

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<sup>47</sup> Annex V. Livelihood Zone Data Book 2014. Table 10.1.

<sup>48</sup> From an unclear definition of "forests" the total forest is alternatively given as 191,667 km<sup>2</sup>, or about 30% of the country's total land area. Another estimate is 62.6% with another 2.6% under trees with crops. See Annex IV. Situation Analysis Report 2013/2015. Section 12.3, Table 3-3. The inventory projects under CAMP will be important in confirming the correct figure.

<sup>49</sup> Of which 121 Central Forest Reserves are said to have a total area of 1,205,686 ha.

<sup>50</sup> Annex IV. Situation Analysis Report 2013/2015. Table 3-3.

They directly produce food (fruit etc), feed (livestock and wildlife grazing), and fibre (including wood for construction materials and paper/board products). In many rural areas, forests are the only source of roofing materials or wall-construction material for human and livestock shelter, as well as storage for agricultural produce. Forests and woodlands provide almost all the fuelwood and charcoal for energy in households, for curing / drying some foods, and for baking bricks. Trees integrated into cropping and livestock systems yield some of the benefits of woodlands, as well as offering windbreaks and other environmental services. Furthermore, alongside the wetlands and grasslands, South Sudan's woodlands are home to wildlife, the backbone of a potentially lucrative nature tourism industry.

In terms of "livelihood security", primary forestry products are not sensitive to weather shocks and rely on local labour. Forestry thus offers employment not reliant on the seasons, increasing households' resilience, production diversification and effective use of uncultivated land. Major forest products are not edible but can nevertheless contribute to food security indirectly through value addition and income.

Forests and woodlands are thus an essential life-support resource which has functions that span the economic, environmental and social spheres of life. Forests are a gift of nature but their sustenance cannot be left to chance - ensuring sustainable delivery of the above socio-economic benefits requires that the forestry subsector be managed and invested in. The CAMP forestry interventions are designed to ensure this.

#### *2.4.1.3 Production and consumption*

The most visible use of forests is forest products. The demand for forest products in South Sudan is not known. Only for fuelwood and charcoal, which are used daily by most of the population, were estimates available.<sup>51</sup> For timber products, which normally enter established commerce more than non-timber forest products, the country still has to rely on informed estimates. Baseline estimates of production and trade have been produced using best available figures to give the current demand levels in Table 2-5.

The table shows that in terms of production and consumption, by far the most dominant forest products in South Sudan are fuelwood and charcoal which account for over 80% of all wood used. Sixty two percent of rural and 39% of urban households used fuelwood as a source of energy in 2009; a few key informal industries also use it heavily, especially in brick-making and bakeries. It is estimated that a total of 108,000 tonnes of charcoal was consumed annually in the country in 2009.<sup>52</sup> Seventy nine percent of this total was consumed in urban areas and the rest in rural areas. The urban areas of Central Equatoria State (that is, Juba and surrounding areas) consumed 45% of the national total followed by the urban areas of Upper Nile State (mostly Malakal) which consumed 14%. These two areas also show the highest estimated charcoal annual consumption per household of 854kg and 461kg respectively. Generally the more wood resources are openly available, the more fuelwood is collected by users, particularly in rural areas of Western Bahr el Ghazal, Western Equatoria, and Eastern Equatoria states, without any consideration of resource sustainability.

Charcoal and fuelwood have important social dimensions which apply everywhere in the country and to almost all social strata. They are also commodities with the most visible and direct impact on women, who must therefore be prominent in seeking solutions. Furthermore, fuelwood and charcoal enterprises, being of generally small/medium scale and widely distributed, have an extraordinary capacity to create jobs; in this way they reflect well the

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<sup>51</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-39.

<sup>52</sup> Annex IV. Situation Analysis Report 2013/2015. Table 12-20.



spirit of the SSDP<sup>53</sup> which places highest among its criteria for prioritizing public expenditure the “potential for quick poverty-reducing growth.”

The market for fuelwood is largely domestic due to high transport costs relative to its value; however, charcoal can be profitably transported much farther – indeed even some international charcoal trade between South Sudan and Sudan is reported.

Table 2-5 shows industrial roundwood as the next most important category of wood products. The volume of saw and veneer logs is approximately one quarter that of other industrial roundwood. A higher comparative volume of saw and veneer logs would normally be expected as South Sudan has no pulp industry. The volume was derived from the ratio for Eastern Africa and will require verification during CAMP implementation. Processing of wood is an area of opportunity for industrialisation but also of exporting higher-value products for foreign exchange earnings.

**Table 2-5: Baseline estimates for selected wood products**

Product	Annual Consumption in roundwood equivalent (RWE) <sup>54</sup> for 2010				
	E. Africa per-	South Sudan		Eastern Africa	
	capita (m <sup>3</sup> )	(m <sup>3</sup> )	% of S. Sudan total	(m <sup>3</sup> )	S. Sudan share (%)
Wood Fuel	0.781	7,020,000	80	239,158,292	3
Charcoal	0.040	360,000	4	9,525,272	4
Saw and Veneer Logs	0.028	252,000	3	4,040,227	6
Other Industrial Roundwood	0.104	936,000	11	14,998,558	6
Sawnwood (i.e. lumber)	0.005	45,000	0.5	677,400	7
Wood-Based Panels	0.0045	40,500	0.5	427,132	9
Paper and Paperboards (Mt)	0.005	45,000	-	1,011,368	4
Paper and Paperboards m <sup>3</sup> (roundwood equiv at 1mt=5m <sup>3</sup> )	0.025	225,000	2	5,056,840	4
<b>Total, roundwood equivalent</b>	-	<b>8,878,500</b>	<b>100</b>	<b>273,883,721</b>	<b>3</b>

Source: CAMP TT

Non-timber forest products (NTFPs) from forests and woodlands include gum acacia (and other resins and gums), shea nut (locally known as "lulu" fruits), fibres, grasses, honey and oils, plus sand, gravel and forest soils. Many non-timber forest products are harvested for local use and, to some extent, for trade. Gum acacia is among South Sudan’s major export products for which there remains significant unexploited potential.

## 2.4.2 Key players

For public policy, it is important to highlight rural subsistence users as key players in the forestry subsector, because they have the potential to greatly affect whether the resource is adequately cared for and whether it faces certain threats – they are the *de facto* “custodians” of the resource. Local communities are the largest single forest stakeholder.

### 2.4.2.1 Local communities and subsistence users

As described above, the forests of South Sudan which enjoy formal government protection together cover only an estimated 19,500km<sup>2</sup>. There are at least another 207,000km<sup>2</sup> of tree vegetation which is not formally protected and 257,236km<sup>2</sup> of shrubs. It is clear therefore

<sup>53</sup> Republic of South Sudan. 2013. *South Sudan Development Initiative 2013-2020 Final draft report*. Government of Republic of South Sudan: Juba.

<sup>54</sup> All volumes are in roundwood equivalent (RWE) i.e. the volume of raw material roundwood it takes to make the final product after taking away wastage in processing.

that most forests and woodlands are in the hands of the people and not of the government. The government's role in managing these forests under "common-property customary tenure regimes" is not as owner, but as potential partner assisting the people closest to the resources to conserve, utilise and manage them sustainably.

#### *2.4.2.2 Informal entrepreneurs in fuelwood, charcoal and other value-chains*

More important than the commercial timber private sector operators are the charcoal and fuelwood entrepreneurs. They operate informally now and will continue to do so. They have potentially the greatest roles in forestry in creating jobs but few have shown any sense of sustainability – they cut trees and never replant; they even cut high-value species like gum acacia. Success in protecting forests requires that they, along with the small scale sawmill entrepreneurs, be effectively engaged and be given an incentive to plant for their own business growth and sustainability,

Commercial-scale processors currently limit their operations to processing teak and other timber species; they sometimes buy logs from out-growers of plantation trees. More significant numbers of livelihoods come from value added processing by small-scale entrepreneurs of other biomass, gum acacia, shea butter and other non-timber forest products (NTFPs). Their production activities are not regulated, resulting in unsustainable resource extraction. To increase production and achieve sustainable management of forest and tree resources, it will be important to better organise value-chain players, to promote a shift from subsistence to more commercial production.

#### *2.4.2.3 Commercial private sector*

Commercial private sector entities of significant scale are not numerous. In resource-management terms, they are role players but have only local significance. Their greater role is in generating exportable timber (mostly teak). They must partner with the government to inject dynamism and growth into the processing segment of the timber value chain, and to carry out future industrial tree planting to ensure the sustainability of the industry.

All forest products are traded by commercial traders and exporters. The two large scale timber mills, can generally provide processed timber to both domestic and external markets, given reliable supplies. Smaller traders deal in small quantities and the supply is unsteady. A challenge is that the small traders remain un-organised and only poorly linked to producers.

#### *2.4.2.4 National and state government forestry authorities*

Capacity building is needed for the government, not only on technical subjects but also on strategic planning and sector oversight. The government will very quickly need to make its recent policy workable by designing implementable legal, regulatory and incentive instruments. Forestry administration functions must be improved so as the government can secure and protect forest reserve boundaries, manage the reserves, create a positive environment for small and large private enterprises to prosper, and deliver public services. Making progress on this will be given the highest possible priority in the early stages of CAMP implementation.

Furthermore, given that most forests and woodlands will always remain outside government reserves, the government will need to mobilise the community users to handle their stewardship role effectively. Failure to do this will mean uncontrolled loss of most forests – the government will then be left with its un-ambitious 20% of land cover as South Sudan's forest legacy.

### **2.4.3 Overview of project profile rationale**

Despite significant expanses of dryland, South Sudan is generally well-watered and also has a diversity of altitudes and forest-relevant agro-ecologies which can support diverse forms of

forestry. As a new country, South Sudan has the opportunity to manage its forests properly from the beginning. The project profiles developed reflect this. These opportunities are presented in Table 2-6 as follows:

- Build an information system including regularly updated and accessible databases and analytical products for prioritisation, exploring future trends and decision making ;
- Drawing on international best practice, upgrade institutional capacity to efficiently implement policy, formulate laws, strategies and regulations/incentives and deliver public services that facilitate sustainable use of forests for equitable public and private sector wealth creation for all strata of society;
- Capitalise on availability of large areas of land with soils and climate that can support industrial-scale forest plantation development and significant area of forest reserves, including mature plantations of high-value teak;
- Promote sustainable community use of a very large resource base of common-property forests, woodlands and scrubland outside reserves in a country of low population density, with only 3.8% of the land cultivated, and so allow further conservation of forests without affecting the survival/livelihood needs of many people;
- Promote local manufacture of processed timber forest products (including sawnwood, panel products) for which there is a significant existing market;<sup>55</sup>
- Develop forest-based tourism based on the diverse rural environment of forests at varying altitudes and areas of special biological interest;<sup>56</sup> and
- Adopt and mainstream forest resources and value-chain management practices compliant with international norms to combat climate change and with the principles of the United Nations Conference on Environment and Development (UNCED) for sustainable forest management.

**Table 2-6: Forestry: opportunities challenges, development themes and projects**

<b>Opportunities</b>
<b>Challenges and constraints</b>
<b>Development Themes</b>
<b>Projects</b>
<p><b>Build an information system, including regularly updated and accessible databases and analytical products for prioritisation, exploring future trends and decision making.</b></p> <p>Poor state of sector information on: size of the resource; demand for the goods and services of forests; institutional capacities and needs; and, ongoing activities in the forest including investment and investors.</p> <p><i>Institutional development</i></p> <p>03.12 National forest resources inventory, information and management plans project</p> <p><i>Economic growth and livelihood improvement</i></p> <p>03.04 Market development and promotion for commercial forest products project</p>
<p><b>Drawing on international best practice, upgrade institutional capacity to efficiently implement policy, formulate laws, strategies and regulations/incentives and to deliver public services that facilitate sustainable management of forests for equitable public and private sector wealth creation for all strata of society.</b></p> <p>Weak policy, legal and institutional framework and poor capacity for promoting development and public service delivery</p> <p><i>Reconstruction and recovery</i></p> <p>03.01 Forestry sector project preparation facility and sawlog plantations grant scheme fund project</p> <p><i>Institutional development</i></p> <p>03.13 Forest policy and legal framework establishment and maintenance project</p> <p>03.14 Forestry institutional and human resources capacity development project</p>

<sup>55</sup> For non-timber forest products, there are already a number of significant interventions underway, especially with SNV and USAID support, to upgrade the value chains, in particular for gum acacia and shea.

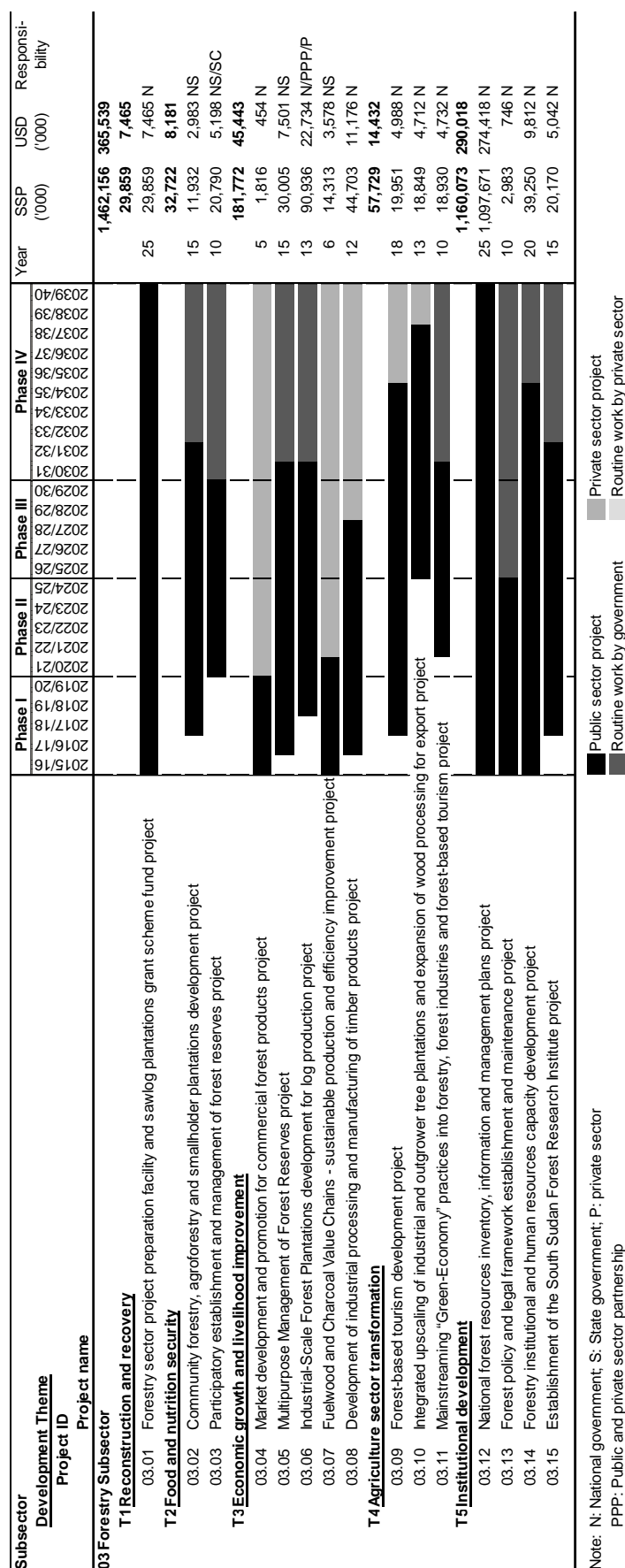
<sup>56</sup> A specially valuable location for future growth in nature-based tourism is for those forests which are next to South Sudan's potentially top tourism attraction - the annual migration of nearly a million white-eared cob between Boma and Bandingilo national parks, a phenomenon said to rival the Ngorongoro Crater/Serengetignu (wildebeest) migration in Tanzania/Kenya.

**Table 2-6: Forestry: opportunities challenges, development themes and projects (cont.)**

Opportunities
Challenges and constraints
Development Themes
Projects
03.15 Establishment of the South Sudan Forest Research Institute project
<b>Capitalise on availability of large areas of land with soils and climate that can support industrial-scale forest plantation development and significant area of forest reserves, including mature plantations of high-value teak.</b>
Inadequate and poor management and conservation of public forests and limited efforts to increase industrial forest resources
<i>Economic growth and livelihood improvement</i>
03.05 Multipurpose Management of Forest Reserves project
03.06 Industrial-Scale Forest Plantations development for log production project
<i>Agriculture sector transformation</i>
03.10 Integrated upscaling of industrial and outgrower tree plantations and expansion of wood processing for export project
<b>Promote sustainable community use of a very large resource base of common-property forests, woodlands and scrubland outside reserves in a country of low population density, with only 3.8% of the land cultivated, and so allow for further conservation of forests without affecting the survival/livelihood needs of many people.</b>
Inadequate formal protection of forests possibly due to perception of abundance; inadequate engagement of communities and individuals in participatory management of forests and trees
<i>Food and nutrition security</i>
03.03 Participatory establishment and management of forest reserves project
03.02 Community forestry, agroforestry and smallholder plantations development project
<b>Promote local manufacture of processed timber forest products (including sawnwood, panel products) for which there is a significant existing market.</b>
Limited investment in production, processing and trading businesses
<i>Economic growth and livelihood improvement</i>
03.07 Fuelwood and Charcoal Value Chains - sustainable production and efficiency improvement project
03.08 Development of industrial processing and manufacturing of timber products project
<b>Develop forest-based tourism based on the diverse rural environment of forests at varying altitudes and areas of special biological interest.</b>
Limited domestic nature tourism interest to support conservation commitment
<i>Agriculture sector transformation</i>
03.09 Forest-based tourism development project
<b>Adopt and mainstream forest resources and value-chain management practices compliant with international norms to combat climate change and with the principles of the United Nations Conference on Environment and Development (UNCED) for sustainable forest management.</b>
Forest sector management not yet compliant with international norms
<i>Agriculture sector transformation</i>
03.11 Mainstreaming "Green-Economy" practices into forestry, forest industries and forest-based tourism project

Figure 2-3 shows the investment planning space of the forestry subsector, which describes development themes, project titles, estimated project costs and the sequence of project implementations according to project priorities and the funding availability.

Figure 2-3: Investment planning space (IPS) for the forestry subsector



Note: N: National government; S: State government; P: private sector  
 PPP: Public and private sector partnership

## **2.4.4 Justification of projects by development theme**

### **2.4.4.1 Reconstruction and recovery**

#### ***Reactivating investment and technical interventions for sector development***

The time is ripe to promote development by investing and providing technical assistance to stimulate the forestry sector. The CAMP project profiles will need to be developed into full-scale projects ready for funding. In order to do this, the 03.01 Forestry sector project preparation facility and sawlog plantations grant scheme fund project will provide funding and capacity to elaborate the profiles into fully fledged projects as required by the government and its development partners.

A small-grants facility to fund small-scale tree-planting by interested individuals or small/medium enterprises is part of this project, drawing on the success of a similar programme in Uganda. Given the long rotation of forests, the grants activity should start as soon as possible.

#### ***Critical rural infrastructure***

Even before the various conflicts, South Sudan did not have a well-developed rural infrastructure, especially in the remote areas where forests tend to be. Repairing public infrastructure is covered by the Institutional Development subsector cluster of CAMP projects given the likelihood that benefits will be shared among many subsectors. Coordination on this issue will be done by the 05.03 Support to CAMP implementation coordination task team project.

### **2.4.4.2 Food and nutrition security**

With only 3.8% of the land cultivated, South Sudan's people generally live close to the remaining forests and woodlands, except in the floodplains and the driest parts of the country. These extensive woodlands offer a great opportunity to contribute to food security, by producing food and, more importantly, by generating income which provides purchasing power for food. However, access to the forest is easily threatened by competing interests of communities and individuals. Furthermore, some food security benefits of forests are enhanced when selected tree and non-timber species are integrated into farming systems through improved agroforestry techniques. Communities and individuals are not properly engaged in the management of forests, woodlands and trees – partly because they are plentiful and not perceived to be under threat.

#### ***Sustainable community management of forests***

It is important to maximise the opportunities of a widely available resource with better management and more controlled access. The 03.03, Participatory establishment and management of forest reserves project offers an umbrella to formalize the control of communities over forests in their neighbourhood. Reliable management permits planned exploitation, provision of raw material supplies for processing enterprises, and income generation for local prosperity. Local reserves can also be managed for multiple benefits, including controlled grazing of community livestock. Reservation of lands by communities can enable the country to surpass its ambition of 20% long-term forest cover under government reserves.

The 03.02 Community forestry, agroforestry and smallholder plantations development project is a necessary complement to the reservation of community forests. This project manages trees outside forests which are integrated into land use/farming systems. From on-farm trees, additional income can be generated contributing to rural food security and combating poverty.

#### ***2.4.4.3 Economic growth and livelihood improvement***

South Sudan is blessed in having large areas of land with soils and climate that can support industrial-scale forest plantation development, a significant area of forest reserves and some mature plantations of high-value teak. This existing resource and the potential to create more is a great opportunity for forest industry development. However, there is inadequate and poor management of public forests and limited efforts to increase industrial forest resources, significant areas of which are believed to have been decimated during the country's protracted conflicts.

#### ***Management of forest reserves for multiple functions***

While economic growth is the focus of the thematic pillar, forest reserves, which are mostly of natural forests, are best managed for more than the single function of supplying raw materials for processing. They are more valuable if managed for multiple purposes, both productive and protective. Under the *03.05 Multipurpose Management of Forest Reserves project*, management will be designed to suit resource characteristics and potential and get the best value from combining functions. The project will benefit from resource information derived from the inventory project which has been a challenge constraining sound management efforts to date. Apart from timber concessions, management can be for protection of rivers and the land from erosion, or the vegetation and wildlife for biodiversity or tourism. Forests can also co-exist with controlled grazing by rural community livestock.

#### ***Large-scale afforestation and processing***

The existing forests offer an immediate opportunity for rural industrialisation; but establishment of greater processing capacity requires assurance of abundant raw material supplies in the long term. South Sudan's historical teak plantations are now scattered, degraded, and therefore difficult to harvest profitably – these are major challenges and constraints to viable industrial exploitation. The *03.06 Industrial-Scale Forest Plantations development for log production project* will establish some 30,000ha of industrial plantations; a compact plantation reduces unit costs of transporting logs to processing mills.

Currently, two significant private sawmills operate in the country and produce sawnwood and “squares” of teak mostly for export. They are old and in relative disrepair. The *03.08 Development of industrial processing and manufacturing of timber products project* will assist in rehabilitating, upgrading and possible expansion. The project will also explore the viability of less wasteful conversion of valuable teak into sliced veneer, which can earn more foreign exchange per unit volume of teak. Progressively, the activities of this project should be dominated by the private sector.

#### ***Market information and development***

The production and consumption of wood products for the country are presented in Table 2-5 and was based on educated estimates. To confirm these estimates, which are the basis for selecting the correct scale of project interventions, the *03.04 Market development and promotion for commercial forest products project* must start with establishment of an information baseline on forest products. Based on its findings, the project will develop and start implementation of market development/promotion for the most promising products.

#### ***Fuelwood and charcoal development***

The *03.07 Fuelwood and Charcoal Value Chains - sustainable production and efficiency improvement project* aims to create jobs in an area dominated by small/medium scale enterprises, many informal. Fuelwood and charcoal development is an example of a “people's” area of business opportunity. The project will pay specific attention to the use of fuelwood and charcoal in enterprises, such as brick-making and baking. Given that women are particularly affected, the project will engage many of them in the project and will design interventions for high gender sensitivity.

#### 2.4.4.4 Agriculture sector transformation

##### ***Integrated forest plantations and processing capacity***

As plantation area grows, new opportunities for industrial capacity investment arise; currently resources (trees) are dispersed and not concentrated enough to allow industrial integration. The two streams – resource creation and its processing – will converge in the 03.10 Integrated upscaling of industrial and outgrower tree plantations and expansion of wood processing for export project. A later upscaling phase will have far higher private sector participation, either alone or through public-private partnerships.

##### ***Developing new opportunities in forest-based tourism***

Forest-based tourism is a new area of opportunity. The 03.09 Forest-based tourism development project will take advantage of South Sudan's diverse rural environment, with its forests at varying altitudes and areas of special biological richness. The project will link with established private sector tourism organisations.

##### ***Greening the forest economy - adopting international climate change norms***

South Sudan has a relative lack of knowledge of climate change issues and lack of familiarity with how to integrate climate change considerations into management practices along the entire value chain of forestry (from the field through processing to marketing and consumption/use). The 03.11 Mainstreaming "Green-Economy" practices into forestry, forest industries and forest-based tourism project will help to create a South Sudan that is fully compliant with emerging global norms for responsible climate change behaviour in the forestry value chains. The adoption of compliant practices due to project support has immediate economic benefits.

#### 2.4.4.5 Institutional development

##### ***Creating a sound information base***

As South Sudan is a new state, it has the opportunity to build a state of the art information system including regularly updated and accessible databases and analytical products for prioritisation, selecting the scale of development interventions, exploring future trends and decision making. The 03.12 National forest resources inventory, information and management plans project will establish the information and planning foundation for all other projects.

The project will establish baselines, give updated forest areas and upgrade existing databases; it will also develop a series of information products for easy access to the data/information.

##### ***Creating a sound legal and policy framework***

The challenges and constraints faced in institutional capacity are well illustrated by the protracted process of approving the new Forest Policy; the even longer delays in getting a matching national law; and the absence to date of implementing regulations. The 03.13 Forest policy and legal framework establishment and maintenance project will address these shortcomings. The project will boost the government's inadequate capacity for implementing the draft Forest Policy 2013. It will support preparation and adoption of key legal instruments such as the Forestry Law, related legal instruments, regulations and incentives for implementation of the new policy.

##### ***Training and research***

South Sudan has weak organisational structures. The forestry subsector will cooperate with the Institutional Development subsector, especially on forestry specific issues. The 03.14 Forestry institutional and human resources capacity development project will study and propose improvements to existing and proposed institutional arrangements. The project will



provide funds and operate a forum for the government to consult regularly with stakeholders about its work.

The project will also assess training and education needs and determine staffing levels. The Kagelu Forestry Training Centre at Yei is the only centre offering forestry related courses.<sup>57</sup> The project will add to the teaching facilities and dormitory space to cater for short specialised courses. It will also explore how best to link to existing educational institutions that offer forestry related courses, such as the University of Juba and the University of the Upper Nile.

South Sudan can access knowledge from other international organisations but it requires adaptation to local conditions. The *03.15 Establishment of the South Sudan Forest Research Institute project* would support stepwise establishment of a research institute, initially at the University of Juba and later as a freestanding institution. The project will establish facilities and support training of specialists, in cooperation with the Institutional Development cluster of CAMP.

### **2.4.5 Implementation priorities**

Ideally projects would be implemented as indicated in the current IPS timeline. However, this may not be possible due to non-availability of funds. Implementation priorities are presented to be used under various funding availability scenarios. The IPS timeline will be adjusted to reflect the appropriate scenario. Table 2-7 shows the implementation priorities for sequencing CAMP forestry projects. Priorities will be set based on the most promising commodities and services which will be identified early in the CAMP implementation period.

**Table 2-7: Forestry development projects sequencing**

<b>Category</b>	<b>CAMP Projects</b>
High priority	03.12 National forest resources inventory and information management 03.04 Market development and promotion for commercial forest products 03.01 Forestry sector project preparation facility and sawlog plantations grant scheme fund
Medium priority	03.13 Forest policy and legal framework establishment and maintenance: 03.14 Forestry institutional and human resources capacity development 03.05 Multipurpose management of forest reserves project 03.06 Industrial scale forest plantations development for log production project 03.02 Community forestry, agroforestry and smallholder plantations development 03.07 Fuelwood and Charcoal Value Chains - sustainable production and efficiency improvement 03.08 Development of industrial processing and manufacturing of timber products
Longer term	03.09 Forest-based tourism development project 03.03 Participatory establishment and management of forest reserves 03.15 Establishment of the South Sudan Forest Research Institute 03.10 Integrated upscaling of industrial and outgrower tree plantations and expansion of wood processing for export 03.11 Mainstreaming “Green-Economy” practices into forestry, forest industries and forest-based tourism

<sup>57</sup> Kagelu Forestry Training Centre (KFTC) – Yei River Country, Southern Sudan: Curriculum for the Forestry Certificate Course. (Revised 2008). KFCTU/USAID/Winrock International, June 2008.

#### *2.4.5.1 High priority*

These projects set the stage for the other projects. The 03.12 National forest resources inventory, information and management plans project will establish an information and planning foundation. The 03.04 Market development and promotion for commercial forest products project will establish an information baseline of forest products suitable for market development. The results of these projects will be the foundation for future planning and decision making. In addition, the 03.01 Forestry sector project preparation facility and sawlog plantations grant scheme fund project must be prioritised so that any expressions of interest by development partners or government to fast-track CAMP projects can be followed up immediately with full formulation.

#### *2.4.5.2 Medium priority*

The CAMP implementation philosophy offers flexibility: projects do not have to be implemented exactly as designed. Pragmatism should apply, including the possibility that, for some medium priority projects, selected components would be funded first. Project preparation support and advance training activities should start almost concurrently with high priority activities. For example, long-term training fellowships should be funded even if the rest of the project is delayed.

Following this rationale, the components of 03.13 Forest policy and legal framework establishment and maintenance project that develop and implement forest regulations should come first. Some components of the 03.14 Forestry institutional and human resources capacity development project must start early to develop capacity, as should on-the-job training components in other projects. Preparatory components of the 03.05 Multipurpose Management of Forest Reserves project, 03.06 Industrial-Scale Forest Plantations development for log production project and 03.02 Community forestry, agroforestry and smallholder plantations development project could also start early.

As capacity is built and more funds become available, processing projects can be initiated, with as much attention to the 03.07 Fuelwood and Charcoal Value Chains - sustainable production and efficiency improvement project as to industrial processing under 03.08 Development of industrial processing and manufacturing of timber products project.

#### *2.4.5.3 Longer term*

These projects will be started as funds become available, including new ventures into forest-based tourism with the 03.09 Forest-based tourism development project and the creation of village level forest reserves with the 03.03 Participatory establishment and management of forest reserves project.

Those projects that were partially started as medium priority would be completed here; their longer term components would start. The 03.15 Establishment of the South Sudan Forest Research Institute project is an important project but it could be done in the longer term if funds are not available.

#### *2.4.5.4 Private sector*

Investment in forestry has in the past been dominated by the government. Government "investment" has so far largely taken the form of creating forest reserves; although this amounts to mere "storage" of forest resources, it creates the basis for subsequent investment into value-addition by the government itself or by the private sector. The government also invested in industrial scale teak plantations which appear to be the most promising resource for early industrialisation. It is already a source of quality timber exports.

Formal sector private investment in the forestry subsector is still in its infancy: two concession holders in West Equatoria State have each invested more than a million US dollars in sawmilling. Most South Sudanese investors in forestry remain small-scale. The CAMP situation analysis revealed that money from informal sources, rather than formal loans, covers most of the initial capital for investment into forestry and forestry products businesses. Processing enterprises generally face challenges to access suitable technology, obtain loans from formal sources, and find markets for their production.

It is realistic to expect private sector investment flows to grow significantly only after the first five years of the CAMP timeline, which means that long-term investments like plantation establishment should first use public funds. The route to privatisation should be by sale of already-mature and established resources.

## 2.5 Fisheries subsector

### 2.5.1 Overview

#### 2.5.1.1 State of capture fisheries

The fishery is described in detail in the Situation Analysis Report 2013/2015 (Annex IV) and in the Development Options Analysis 2014 (Annex III).

In South Sudan 1.7 million people depend directly on fisheries for livelihood, food security or income. The fishery produces about 140,000 tonnes/year. The majority (56%) of this fish is dried or smoked whilst the rest is eaten fresh, either in the fishing communities where it is caught or sent to the nearby towns. The potential sustainable yield from wild fisheries is estimated in the order of 200,000 tonnes/year,<sup>58</sup> worth about USD800 million at 2013 Juba prices. Consumption of fish in South Sudan is about 17kg/person/year. The numbers of fishermen is around 220,000, most of these subsistence, with possibly 12,000 "commercial" fishermen, though nearly all of the "commercial" fishermen have alternative sources of income.<sup>59</sup>

Currently there is no management of the wild fishery, no routine data collection, the biology of many of the target fish in the catch is unknown, there is no control on gears used or destructive fishing methods, and the fishery is an open entry one. This combination is most undesirable and unless changed will lead to overfishing in a relatively short time; this will result in declining catches, lower incomes in rural areas, reduction of protein in the diet of the population and increased imports. Already significant areas near the larger towns and some lakes are overfished.

There is little value adding. Fish is processed in fishing camps and villages by smoking or drying (56% of the catch), or sold fresh whole. Opportunities for increasing the value of the catch exist, simply by shifting from smoking and drying fish to producing fish chilled on ice, which receives a higher price. There is a limited opportunity for producing value added fish products for local consumption and perhaps for export in the future.

There is no room for large scale industrialisation of capture fisheries, nor for an emphasis on greatly increasing production. The fishery will expand naturally, as all unregulated fisheries do with time, beyond the maximum sustainable yield (MSY), unless controlled.

The emphasis of development of the capture fisheries will have to be to: protect nutrition, employment and incomes through co-management of the resources with the users of the resources so as to ensure the fishery is exploited sustainably, and increase incomes and employment from the fishery by increasing the value of the catch by improvements in processing and marketing.

#### 2.5.1.2 State of aquaculture

Despite several years of efforts by FAO, NGOs and other donors, aquaculture is undeveloped. There are technical problems with site selection, skills, feeds, fingerlings for stocking, harvesting and general husbandry.<sup>60</sup> The potential however is great. The climate is very suitable in the Greenbelt Livelihood Zone which has gravity fed streams, many suitable sites with clay soils, year round surface water and strong local markets for the products of aquaculture. Subsistence ponds could improve local nutrition; small scale commercial fish

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<sup>58</sup> Annex IV. Situation Analysis Report 2013/2015. Section 13.5.2.

<sup>59</sup> Annex IV. Situation Analysis Report 2013/2015. Section 13.5.3.

<sup>60</sup> Annex IV. Situation Analysis Report 2013/2015. Section 13.5.7.

farming in clusters around towns promises to improve nutrition as well as employment and incomes; and large scale intensive commercial fish farming has the potential to transform the economic landscape in large areas of the country.<sup>61</sup> There may also be potential for cage culture in some areas in the Nile-Sobat Rivers Livelihood Zone.

## **2.5.2 Key players**

### *2.5.2.1 Subsistence fishers*

Subsistence fishers make up the majority of people who fish. They are both men and women, and use a wide range of gears. They process and sell, or give away surpluses. At least 210,000 subsistence fishers exist in South Sudan.

### *2.5.2.2 Commercial fishers and small scale fish processors*

Commercial production from capture fisheries is in the hands of small scale fishers who normally use gill nets to catch for income. The majority of these producers live along the Nile, Sobat and other large rivers, and in the Sudd swamps in Jonglei, and in the bordering areas of Central Equatoria, Lakes, Unity and Upper Nile states. Production is thus spread out over a very large area. Since getting fresh fish to market is problematical in most areas, drying fish is the preferred preservation method, although smoking is also practiced where there is firewood. Processing is done by both men and women. These communities produce all of the more than 90,000 tonnes of locally produced fish that is traded fresh, smoked or dried in South Sudan (the rest is consumed by the fishers themselves and in their communities).<sup>62</sup> Perhaps 12,000 commercial fishers exist in the country, but the numbers are not known with accuracy, and it is difficult to differentiate between subsistence fishers who sell surpluses and commercial fishers.

Fishing communities have not successfully formed formal cooperatives or producer organisations, except in areas where donor funds resulted in them doing so. Fishing villages or communities do however have some cohesion and form a basic unit on which it will be possible to introduce co-management measures to protect the stocks from overfishing.

### *2.5.2.3 Large scale fish processors*

There are no large scale fish processors in South Sudan. As demand grows for processed fish in the larger towns, from the urban elites and the burgeoning middle class, private operators will begin to provide this service. Similarly for export, the private sector will develop facilities when supplies improve (probably from aquaculture) and there is an opportunity for export.

### *2.5.2.4 Subsistence fish farmers*

Subsistence fish farmers exist in the southwest of South Sudan, near Yei and Yambio. They farm at a very low intensity, in small ponds. Production has been very low, both in absolute terms and per hectare of pond, for a variety of reasons. There are about 80 ponds in the Greenbelt Livelihood Zone, half of which do not produce anything.

### *2.5.2.5 Commercial private sector fish traders*

The commercial private sector is engaged in moving fish from the production areas to the markets. Fresh fish is moved by motorbike, pickup truck, boat, or in rare cases, insulated truck, sometimes with ice. At the market the fish is usually sold on to retailers, who sell on again to the consumers. These traders, although small scale, have considerable investment in their business and are extremely adept at exploiting opportunities. They move more than

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<sup>61</sup> Annex III. Development Options Analysis 2014. Section 5.6.1.2.

<sup>62</sup> Annex V. Livelihood Zone Data Book 2014. Sections 19.5, 19.11, 20.4, 20.10.

90,000 tonnes of fish (56% of that having being processed; dried or smoked; the rest fresh) from producer to consumer throughout the country.

Traders also come from Sudan, and using agents in the Nile-Sobat Livelihood Zone and the Bahr-el-Ghazal floodplains, source fish to take to Khartoum on ice, where there is an enormous demand. The traders use refrigerated vans with ice, and boats with large insulated boxes. The ice comes from Khartoum and Kosti. This trade stopped in 2012 but will restart once conditions allow. The trade may have been as much as 20,000 tonnes/year at its maximum.

Traders also move fish from Uganda to South Sudan. Fresh fish from Lake Victoria comes to Juba; dried and smoked fish, from both Lake Victoria and Lake Albert, comes to both Yei and Juba, and onwards in large quantities to northern towns. The traders moving this fish are both Ugandans and South Sudanese.

The introduction of mobile phones in fishing communities has changed the way the fish trade operates, making it more demand orientated. Fish traders are very adept at exploiting opportunities created by this improvement in communications.

#### *2.5.2.6 Commercial fisheries support services*

A large number of enterprises support the fisheries subsector. Retail shops provide stocks of fishing gear in all the larger towns; ice factories (5 in Juba and 1 in Malakal) sell ice used for chilling fish during transport and in retail premises. Outboard engine workshops repair boat's engines for transporting fish and importers bring bulk supplies of fishing gear, and salt and refrigerants for ice manufacture.

#### *2.5.2.7 National and state governments*

The national government in Juba and the state ministries have directorates and/or departments of fisheries which usually include staff dedicated to aquaculture as well; however they are ineffective. The reasons are many and varied and affect other subsectors as well.

There are no research institutions dedicated to research into fisheries or aquaculture. The Padak Fisheries Training Centre near Bor in Jonglei State is the only institution covering capture fisheries or processing and that is not operating and severely degraded due to the recent civil unrest.

The MARF Policy Framework and Strategic Plan 2012-2016 was produced by MLFI in May 2012. The Fisheries and Aquaculture Policy 2012-2017 was produced by an EU consultancy and identifies shortcomings in background data on fisheries in South Sudan and proposes that the "precautionary approach" should be followed. Neither policy is particularly useful unless the ideas in them are implemented.

MLFI investment plans include a parastatal "Sudafish" to improve fish production and marketing, canning factories in the Sudd, and aquaculture. Only aquaculture is realistic.

### **2.5.3 Overview of project rationale**

The situation analysis of the subsector identifies the opportunities, challenges and constraints summarised in Table 2-8, which also shows how the projects propose to address them and how they relate to the development themes. This is further described in the following section.

The main opportunities for the development of the subsector are:

- sustainable yield of 200,000 tonnes of fish from the capture fisheries will be able to achieved and maintained through enhanced resource management using co-management principles;
- subsistence aquaculture together with small and large scale commercial aquaculture will be able to produce up to 70,000 tonnes;
- the value of the catch will be increased initially by a shift to marketing fish on ice instead of dried;
- with a well-managed capture fisheries, post-harvest sector and developing aquaculture industry private sector investment to the subsector will be increased;
- maintain a healthy, vigorous and productive labour supply through avoidance of the looming HIV epidemic.

Figure 2-4 develops this further in the form of the investment planning space in order to show estimated project costs and the sequence of project implementations according to project priorities and the funding availability scenarios developed under CAMP.

**Table 2-8: Fisheries: opportunities, challenges, development themes and projects**

<b>Opportunities</b>
<b>Challenges and constraints</b>
<b>Development Themes</b>
<b>Projects</b>
<b>Achieve a sustainable yield of 200,000 tonnes of fish from the capture fisheries through enhanced resource management</b>
Shortage of skills in national and state governments and among communities
• Necessary to establish/refurbish the Fisheries Training Centre at Padak coupled with an intensive programme of skills enhancement throughout the industry and government, at all levels
• Capacity in the MFLI is to be addressed by the Institutional Development project CAMP implementing ministries capacity development project
<i>Food and nutrition security</i>
04.04 Fisheries information and fisheries resource management systems development project
<i>Institutional development</i>
04.17 Establishment of fisheries training and research institute project
04.18 Establishment of national aquaculture research and training centre project
04.19 Fishers and fisheries communities training project
04.24 States fisheries services capacity development project
No data or management systems to manage the fishery
• Necessary to establish a data collection and analysis system, strengthen research and introduce co-management systems using the communities to assist to manage the fishery.
• Assistance from the "SMARTFISH" project would be expected.
<i>Food and nutrition security</i>
04.04 Fisheries information and fisheries resource management systems development project
<i>Institutional development</i>
04.21 Regional fisheries and aquaculture research projects
04.22 Strengthening of fisheries and aquaculture research project
04.24 States fisheries services capacity development project
Information systems are also to be addressed by the Institutional Development National agricultural information system development project.
Few fisheries bodies get involved in co-management of the resources
• Cooperatives, producer organisations, beach management committees to be established.
<i>Food and nutrition security</i>
04.04 Fisheries information and fisheries resource management systems development project
<i>Institutional development</i>
04.19 Fishers and fisheries communities training project
04.24 States fisheries services capacity development project
No monitoring, control and surveillance of the wild capture fisheries
• With the cooperation of the fishing communities establish local regulations and monitoring
<i>Food and nutrition security</i>
04.04 Fisheries information and fisheries resource management systems development project
<i>Institutional development</i>

**Table 2-8: Fisheries: opportunities, challenges, development themes and projects (cont.)**

<b>Opportunities</b>
<b>Challenges and constraints</b>
<b>Development Themes</b>
<b>Projects</b>
<p><b>Achieve a sustainable yield of 200,000 tonnes of fish from the capture fisheries through enhanced resource management</b></p> <p>04.19 Fishers and fisheries communities training project 04.24 States fisheries services capacity development project</p> <p>No laws and regulations to support co-management of the wild capture fisheries</p> <p><i>Reconstruction and recovery</i> 04.01 Fisheries and aquaculture law project</p> <p><i>Institutional development</i> This will be supported by the Institutional Development Legal and regulatory framework enhancement project</p> <p>Little knowledge of biology of fish in the wild capture fishery nor the effects of fishing on stocks</p> <ul style="list-style-type: none"> <li>· Build facilities and then fund research in capture fisheries, aquaculture and encourage international research</li> </ul> <p><i>Institutional development</i> 04.17 Establishment of fisheries training and research institute project 04.20 Private sector fisheries and aquaculture technical training project is not included 04.21 Regional fisheries and aquaculture research projects 04.22 Strengthening of fisheries and aquaculture research project</p>
<p><b>Increase production from subsistence aquaculture, small and large scale commercial aquaculture. Potential is up to 70,000 tonnes by 2039 mostly from large scale commercial aquaculture</b></p> <p>Legal basis for much of aquaculture needs regularization</p> <ul style="list-style-type: none"> <li>· Introductions and transfers, feed quality, Codes of Practice, etc.</li> </ul> <p><i>Reconstruction and recovery</i> 04.01 Fisheries and aquaculture law project</p> <p>Widespread skills and knowledge shortage</p> <p><i>Food and nutrition security</i> 04.05 Private sector promotion of small scale aquaculture investment 04.07 Small scale aquaculture development and promotion project</p> <p><i>Economic growth and livelihood improvement</i> 04.12 Private sector promotion of large scale commercial aquaculture</p> <p><i>Institutional development</i> 04.18 Establishment of national aquaculture research and training centre project 04.20 Private sector fisheries and aquaculture technical training project is not included 04.21 Regional fisheries and aquaculture research projects 04.22 Strengthening of fisheries and aquaculture research project 04.23 States aquaculture training project 04.24 States fisheries services capacity development project</p> <p>Input availability - feed, fingerlings, predator nets, seine nets, chemicals, fish disease treatments</p> <ul style="list-style-type: none"> <li>· Increasing crop production (as an input for fish feed) is covered by the Crops subsector in a series of crop specific projects (maize, sorghum, cassava, etc.)</li> </ul> <p><i>Food and nutrition security</i> 0407 Small scale aquaculture development and promotion project</p> <p><i>Economic growth and livelihood improvement</i> 0410 Private sector establishment of feedmills for aquaculture Tax incentives and loans to the agriculture sector are covered by the Institutional Development Agricultural business development support project.</p> <p>No quarantine for control of introductions and transfers, nor fish diseases</p> <p><i>Food and nutrition security</i> Covered by the Livestock project Creation of animal diagnostic laboratories, early disease response, and quarantine system project</p>
<p><b>Maximise the value of the catch (initially by a shift to marketing fish on ice instead of dried)</b></p> <p>Bad transport links; Insufficient investment in ice machines by the private sector; no processing; inadequate transport, no insulated trucks; shortage of potable water for ice and processing; shortage of equipment suppliers to capture fisheries and aquaculture; and poor quality control leading to post harvest losses and value reduction</p> <ul style="list-style-type: none"> <li>· Assistance from IGAD in fish marketing would also be hoped for</li> </ul> <p><i>Reconstruction and recovery</i> 04.01 Fisheries and aquaculture law project</p> <p><i>Economic growth and livelihood improvement</i> 04.09 Development of urban fish market infrastructure project</p>

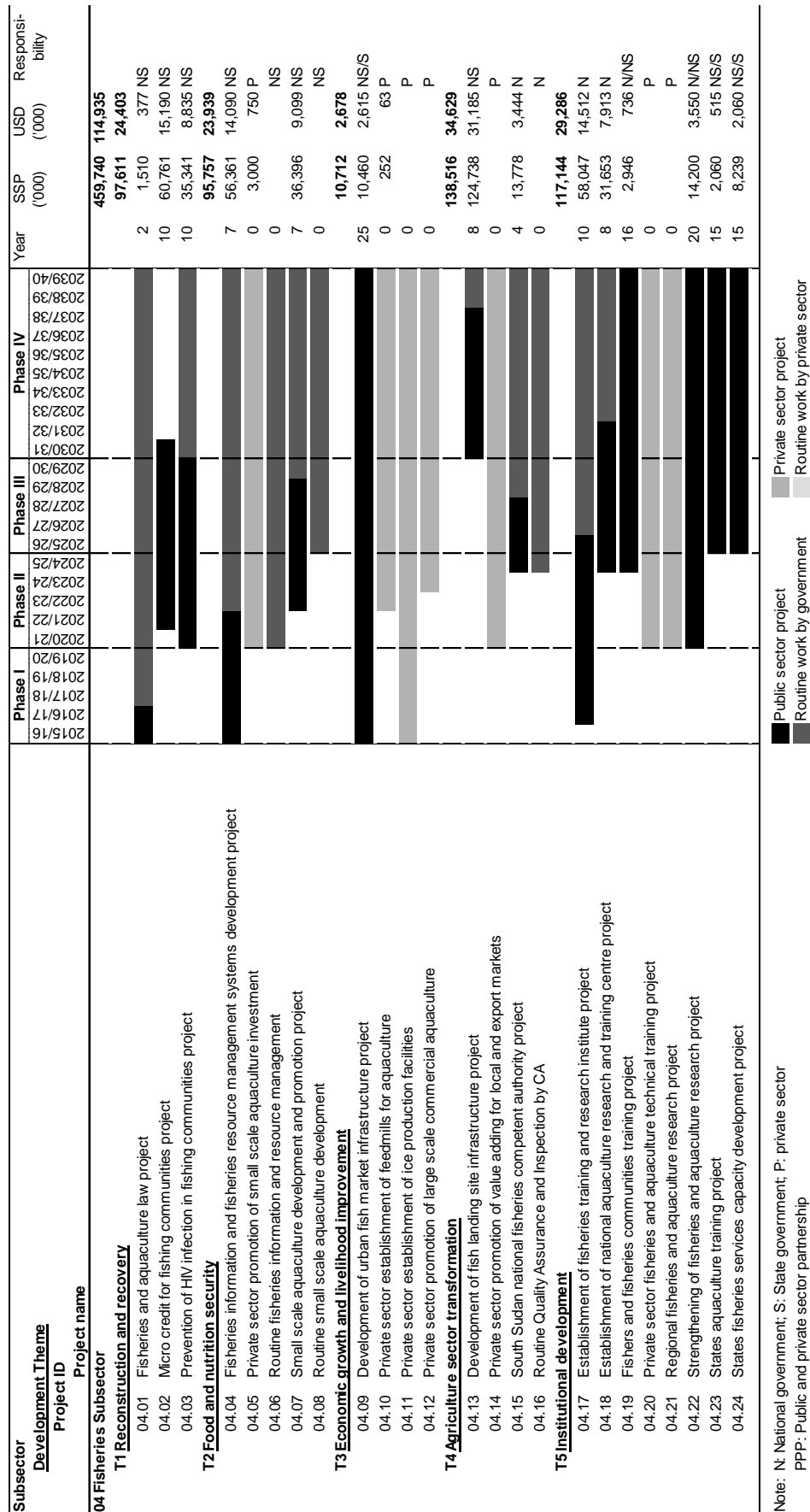


**Table 2-8: Fisheries: opportunities, challenges, development themes and projects (cont.)**

<b>Opportunities</b>
<b>Challenges and constraints</b>
<b>Development Themes</b>
<b>Projects</b>
04.11 Private sector establishment of ice production facilities
Tax incentives and loans to the agriculture sector are covered by the Institutional Development Agricultural business development support project
<i>Agriculture sector transformation</i>
04.13 Development of fish landing site infrastructure project
04.14 Private sector promotion of value adding for local and export markets
04.15 South Sudan national fisheries competent authority project
<i>Institutional development</i>
Feeder roads are covered by the Institutional Development Feeder roads and rural markets construction/ rehabilitation project
<b>Increase investment in the subsector (capture fisheries, post-harvest and aquaculture)</b>
Shortage of investment funds in fisheries and aquaculture
<i>Economic growth and livelihood improvement</i>
Tax incentives and loans to the agriculture sector are covered by the Institutional Development Agricultural business development support project
04.14 Private sector promotion of value adding for local and export markets
04.05 Private sector promotion of small scale aquaculture investment
04.02 Micro credit for fishing communities project
04.10 Private sector establishment of feedmills for aquaculture
04.11 Private sector establishment of ice production facilities
04.12 Private sector promotion of large scale commercial aquaculture
Inability of the fishing communities to raise funds for gear, processing and transport.
<i>Reconstruction and recovery</i>
04.02 Micro credit for fishing communities project
<b>Avoidance of HIV in fishing communities</b>
Remoteness of the communities and ignorance of the dangers of HIV and AIDS
<i>Reconstruction and recovery</i>
04.03 Prevention of HIV infection in fishing communities project

Note: Three projects namely 04.06 *Routine fisheries information and resource management*, 04.08 *Routine small scale aquaculture development*, and 04.16 *Routine Quality Assurance and Inspection by CA* are not included in the table due to government's routine activity nature of these projects.

**Figure 2-4 Investment planning space (IPS) for the fisheries subsector**



Note: N: National government; S: State government; P: private sector  
 PPP: Public and private sector partnership

## **2.5.4 Justification of projects by development theme**

### **2.5.4.1 Reconstruction and recovery**

#### **Law**

Development activities in fisheries will only be successful if there is a modern Fisheries Law. A solid legal basis for activities has to be established. For this reason an immediate priority is the 04.01 Fisheries and aquaculture law project. The new law is important, and will incorporate the principles of co-management, the Precautionary Approach, the Ecosystems Approach and the various other international agreements, and constitutional requirements on natural resource management. This new law will include regulations to control the fishery, and the provision to enact further regulations necessary to manage the fisheries of the country. The new law will also cover aquaculture (particularly introduction and transfers, and disease controls) feed production, and post-harvest marketing and quality control.

#### **Avoidance of HIV**

For reconstruction and recovery a healthy and productive population and labour force is essential. In South Sudan there is an opportunity to address the HIV threat to fishing communities early and mitigate its effects.<sup>63</sup> For this reason a dedicated 04.03 Prevention of HIV Infection in Fishing Communities Project is included. Key players to benefit from this public intervention will be rural fishing communities. Fishermen, and the women in the communities in which they live, are a "Most at Risk Population", (MARF), with rates of up to 8 times that of the general population. These high rates of infection lead to many negative outcomes which are best avoided.

#### **Micro credit for fishing communities**

Increased investment for capture fisheries and post-harvest has been hindered by the inability of the fishing communities to raise funds for gear, processing and transport. Additionally the communities have experienced hardships and loss of gear and equipment due to recent events. A microcredit scheme for these communities has been designed in the 04.02 Micro credit for fishing communities project. The small loans will allow individuals and groups in the main fishing areas to access funds for investment.

### **2.5.4.2 Food and nutrition security**

#### **Sustainable resources management by small scale capture fisheries**

As indicated in Table 2-8, sustainable wild fisheries resources management to secure food and nutrition security is important for subsistence and small scale commercial fishers whose livelihoods are highly dependent on the sustainable management of the resources. To achieve a sustainable yield of 200,000 tonnes of fish from the capture fisheries a number of issues needs to be addressed. The most critical problem facing capture fisheries is the complete lack of management of the wild fisheries, which if not remedied will rapidly lead to depletion of the wild fish stocks, declining catches, reduced incomes, lower employment and reduction in food security. This type of over-exploitation is seen clearly in neighbouring countries such as Uganda and is described in the Development Options Analysis 2014.<sup>64</sup>

The major challenge for the GRSS in capture fisheries is to put in place strong and effective management of the wild fish resources before they are generally overfished, as access to the remoter areas of the country improves. To do this requires a skilled and knowledgeable government service at both national and state level; laws, rules and regulations; catch and effort data plus biological data on the fish in the multispecies fishery; and the cooperation of

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<sup>63</sup> Annex IV. Situation Analysis Report 2013/2015. Section 13.9.1.

<sup>64</sup> Annex III. Development Options Analysis 2014. Section 5.6.2.2.

the fishing communities in the major fishing areas in co-management of fisheries and control of fishing effort. However, in addition to the general lack of a legal framework discussed above, there are other major constraints to the sustainable management of capture fisheries:

- shortage of skills in national and state governments and among communities,
- no data or management systems to manage the fishery,
- few existing fisheries bodies to get involved in co-management of the resources, and
- no monitoring, control and surveillance

The shortage of skills is addressed in section 2.5.4.5 below.

The 04.04 Fisheries information and fisheries resource management systems development project is designed to provide bases for sustainable management. Given the shortage of data on which to base management decisions, it is imperative in the interim for the government to follow the FAO Code of Practice for Responsible Fisheries, which includes implementing both the "Precautionary Approach" and the "Ecosystems Approach", whilst setting up the necessary data collection systems and management plans. Resource management will ultimately be in conjunction with the users of the resources, "co-management", as it is called, which is a requirement of the constitution and local policy, and mandated further by regional and international agreements on natural resource use.<sup>65</sup> This is a high priority, but an expensive project to implement.

#### ***Enhancement of small scale aquaculture***

Fish production from wild capture fisheries has a natural limit, so increasing employment, raising fish consumption and improving nutrition through fisheries will also require investment in aquaculture.<sup>66</sup> For food and nutrition in the rural areas this is best achieved by subsistence small scale aquaculture. To address the widespread skills and knowledge shortage, the 04.07 Small-scale aquaculture development and promotion project is designed to stimulate entrepreneurial commercial small scale fish farming; and also to increase the number of fish ponds owned by subsistence fish farmers for home and community fish consumption. The concept of clusters of small commercial farms around towns, supporting through their activities the subsistence farmers, needs to be developed.

The private sector, both communities and entrepreneurs, is expected to invest in small scale aquaculture and credit will be provided through the 04.05 Private sector promotion of small scale aquaculture investment project, which is government supported through credit and incentives.

Marketing of the products of aquaculture will be into the towns around which the farms are clustered, but with the development of large scale commercial fish farming, there may well be opportunities for export of farmed fish and also for value adding.

#### ***2.5.4.3 Economic growth and livelihood improvement***

##### ***Large-scale and capital intensive aquaculture***

As with small scale fish farming there are opportunities for large scale commercial fish farming. Large scale commercial fish farming is an activity strictly for the private sector, though trained local staff will also be needed on these farms. Large scale fish farming depends on many inputs, most of which, including skilled staff, will have to be imported in the short term. South Sudan has available land and unpolluted water, which are important in large scale fish farming, though land tenure still is a problem. The government is expected to

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<sup>65</sup> Annex IV. Situation Analysis Report 2013/2015. Section 13.5.2.

<sup>66</sup> Annex III. Development Options Analysis 2014. Section 5.6.1.2.

support commercial aquaculture through tax breaks on imports and profits, and through providing access to development loans through the 04.12 Private sector promotion of large scale commercial aquaculture project.

#### ***Input and supply for aquaculture***

For aquaculture to really expand in South Sudan there is a need to establish aquaculture feed mills. Feed can be up to 80% of the costs of running a fish farm, particularly large scale very intensive farms. There are two major constraints to feed mill establishment and both are external to the subsector: feed industries are usually set up for poultry feed production, and there is no poultry industry in South Sudan; and feed mills require inputs of agricultural crops, but currently there is no surplus production to turn into poultry or fish feed. There is now no aquaculture feed production in South Sudan and all feeds will have to be imported in the first instance. Once demand increases, initially for feed for poultry, the private sector is expected to invest in feed production and will need tax incentives and access to agricultural credit through the 04.10 Private Sector establishment of feedmills for aquaculture project.

#### ***Maximising the value of the catch through processing and marketing***

For fish to achieve its best price, it has to be got to the consumer either locally or overseas as quickly as possible, so as to preserve the fish's "just caught" quality and obtain the best prices.<sup>67</sup> To do this, the fish is put on ice on capture and then kept cool all the way to the consumer. However without good roads there is no ice, as ice is usually bought to landing sites from the towns; without ice fish cannot be delivered to consumers fresh. Nearly half of the potential value of the fish is lost, as the fish has to be dried or smoked to preserve, which reduces its value and other post-harvest losses incurred. The provision of all-weather roads is the first step towards to improving the cool chain. Further marketing improvements can then be made by the private sector, which will install ice machines, buy insulated transport and build processing units for value adding. In the long term fish quality will have to be controlled by statute and a Competent Authority will be required to regulate and supervise fish quality control, especially for export.

To increase the value of the wild catch it is necessary to encourage the use of ice to preserve and market fish. Switching from the dried or smoked product to the fresh chilled product doubles returns. The 04.11 Private sector establishment of ice production facilities project covers ice machine installation and is yet again designed for investment by the private sector, helped by government supported tax breaks and access to credit. The ice machines will be installed as the private sector sees fit. The private sector has already installed five ice machines in Juba and one in Malakal, the latter unfortunately now non-operative.

#### ***Market facilities***

Construction of urban fish markets is a responsibility of the municipal authorities in the states and major towns. The 04.09 Development of urban fish market infrastructure project initially covers the design of fish markets, fresh and dried/smoked, so as to provide an appropriate design to the states and municipalities. Funding for actual construction works would have to be found by the municipalities from donors, NGOs or state/municipal funds. The project will enhance the fisheries value chains as a whole.

#### ***2.5.4.4 Agriculture sector transformation***

##### ***High value addition in the fisheries value chain***

In the longer term, if the capture fisheries of the country are to achieve their potential, one central activity will be to increase the value of the catch. Quality control is essential for this

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<sup>67</sup> This is described in "Ice use is best" in Annex III. Development Options Analysis 2014. Section 5.6.1.1 and Figure 5-8.

and the 04.13 Development of fish landing site infrastructure project is designed to provide 9 sites, nearly all in the Nile-Sobat Rivers Livelihood Zone, with appropriate infrastructure for landing and sorting fish, also enabling better data collection and monitoring of the catches, and as focus points for co-management efforts in the fishery. The 04.14 Private sector promotion of value adding for local and export markets project describes the types of investments that will be required in the future, particularly needed because the 04.15 South Sudan national fisheries competent authority project will establish a Competent Authority in South Sudan which will be responsible for fish quality for local and export markets. The Competent Authority will demand high standards in all processing and landing areas, the use of HACCP and GMP<sup>68</sup>, WHO quality potable water in all establishments and for ice production, and also introduce a rigorous inspection system.

#### *2.5.4.5 Institutional development*

Under this development theme improvement of public service delivery, research and training capacity are envisaged. Major players and beneficiaries of the projects developed under this theme are national and state governments whose capacity needs to be strengthened, and private sector businesses and individuals whose skills and knowledge on fisheries need improving.

#### ***Crosscutting institutional development projects***

At the moment the Directorate of Fisheries and Aquaculture Development (DoFAD) in MLFI is ineffective. The national government staff in DoFAD needs both management and skill development. This is to be addressed in a large cross-sector capacity development project, 05 04 CAMP implementing ministries capacity development project and is not a specifically "fisheries" project. It is assumed that in time the ability of the national government to contribute to the management and development of the capture fisheries will be enhanced by this project.

#### ***Establishment of research and training centres***

There are no functioning fisheries or aquaculture training centres, or other institutions. Refurbishing and revitalising the Padak Fisheries Training Centre is an imperative. For addressing the issue of shortage of skills in national and state governments, communities as co-managers of the resources, the fishermen and women who fish, and the fish processors, small scale and industrialised, and for aquaculture in its various guises, the first step is to establish two training centres, where necessary training can be carried out. The 04.18 Establishment of national aquaculture research and training centre project and the 04.17 Establishment of fisheries training and research institute project are designed to fill these gaps. They will provide training and research facilities.

#### ***Fisheries training***

As a second step to improve the skills and knowledge of government fishers and processors, widespread on-the-job training and other skill enhancement measures are to be delivered by a series of projects: 04.19 Fishers and fisheries communities training project for reducing post-harvest losses, improving co-management and understanding of resources management; 04.24 States fisheries services capacity development project and the 0423 States aquaculture training project for improving the skills of state extension workers and administrators; and for the private sector the 04.20 Private sector fisheries and aquaculture technical training project.

#### ***Fisheries research***

To address the situation of no data for the fisheries resources management, no scientific monitoring, control and surveillance and little knowledge of fish biology and stock dynamics,

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<sup>68</sup> Hazard And Critical Control Point; and Good Manufacturing Practice.

two research projects will be implemented: 04.22 Strengthening of fisheries and aquaculture research project and the 04.21 Regional fisheries and aquaculture research project. It is hoped that the research carried out will improve the understanding of capture fisheries and aquaculture in South Sudan, leading to better management of the wild resources and improved productivity of aquaculture.

### 2.5.5 Implementation priorities

The summary of project implementation priorities are shown in Table 2-9. Given the paucity of the budget expected for fisheries development, at least in the early years when peace building and emergency measures are expected to be the focus of development activities, the fisheries subsector cannot expect to start all of its development programmes immediately. Under the most probable funding availability scenario no more than two of the larger programmes can be effected at the same time in the first 5 years; priorities were identified.

**Table 2-9: Fisheries development projects sequencing**

Category	Camp projects
High Priority	04.01 Fisheries and aquaculture law project 04.02 Micro credit for fishing communities project 04.03 Prevention of HIV infection in fishing communities project 04.04 Fisheries information and fisheries resource management systems development project 04.09 Development of urban fish market infrastructure project 04.17 Establishment of fisheries training and research institute project
Medium Priority	04.05 Private sector promotion of small scale aquaculture investment 04.07 Small scale aquaculture development and promotion project 04.09 Development of urban fish market infrastructure project 04.10 Private sector establishment of feedmills for aquaculture 04.11 Private sector establishment of ice production facilities 04.18 Establishment of national aquaculture research and training centre project 04.19 Fishers and fisheries communities training project 04.20 Private sector fisheries and aquaculture technical training project 04.23 States aquaculture training project 04.24 States fisheries services capacity development project
Longer term	04.12 Private sector promotion of large scale commercial aquaculture 04.13 Development of fish landing site infrastructure project 04.14 Private sector promotion of value adding for local and export markets 04.15 South Sudan national fisheries competent authority project 04.21 Regional fisheries and aquaculture research project

#### 2.5.5.1 High Priority

High priority projects are mainly ones necessary either as a part of the reconstruction and recovery phase or as prerequisites for later projects. Of greatest priority to the subsector are two projects: the 04.01 Fisheries and aquaculture law project, which rewrites the law; and the 04.04 Fisheries information and fisheries resource management systems development project, which sets up a system to manage the wild capture fisheries (including a data collection system). As soon as conditions allow, these two projects are scheduled to begin. The fisheries management project contains a large amount of training for enumerators and co-managers of the resources. If fisheries management is not implemented rapidly, overfishing in the capture fisheries will lead to a depletion of the wild fish stocks, which will reduce catches considerably leading to a long term economic, environmental and social disaster.

A year later, so as to have a better venue for much of the skills training and research that will be required in capture fisheries, the 04.17 Establishment of fisheries training and research

institute project to establish the Padak Fisheries Training Centre and associated research institute will be started. This will take several years to implement, but training programmes should be able to start soon after the centre is reconstructed.

Small projects, like the 04.19 Development of urban fish market infrastructure project, have also been included in the initial 5 years of activities. This project only seeks to provide municipal authorities in urban areas with a standard design template for use for both fresh and dried/smoked markets throughout the country. The municipal authorities will be expected to fund the markets themselves at a later date.

Skills enhancement for the states in aquaculture and in fisheries can begin early on, but initially this will have to be based on using overseas institutions, since neither the Padak FTC nor the proposed aquaculture centre will be operational at this stage. There are several projects, across all development themes, dedicated to institutional and management capacity development, spread across capture fisheries, aquaculture and post-harvest, and involving the national government, state governments, private sector and fishing communities. All of these will gradually be phased in as funding allows, and slowly incorporated into the activities of the Padak Fisheries Training Centre and the new aquaculture centre, as they are built and become operational.

By 2020 the situation will have improved and more budget is expected to be available. The Padak FTC will also be operating so a variety of the smaller projects can begin or be upgraded particularly those related to skills development. The 04.03 Prevention of HIV infection in fishing communities project and 04.02 Micro credit for fishing communities project are proposed to start in 2020 and will also contribute to peace and stability in the Nile-Sobat Rivers Livelihood Zone.

#### 2.5.5.2 Medium priority

Aquaculture is an important area generally and the 04.18 Establishment of national aquaculture research and training centre project is a priority; however, beginning work on this will depend on available funding, and is unlikely to start until Phase II of CAMP. The development and training in aquaculture can however continue with the implementation of the 04.07 Small scale aquaculture development and promotion project before the aquaculture centre is operational. This project will establish demonstration commercial and subsistence ponds and undertake training.

#### 2.5.5.3 Longer term

Longer term it is possible to envisage large scale investment in aquaculture by the private sector, and exports of fish from both wild capture fisheries and aquaculture. These will be activities for the private sector (see below). The 04.15 South Sudan national fisheries Competent Authority project will establish a Competent Authority, but since exports are only likely to start after production and quality improves it is not expected to start until 2024.

There is only one publically funded infrastructure project which will actually construct infrastructure, the 04.13 Development of fish landing site infrastructure project. This is intended to centralise fish landings at a series of 9 landing sites in the Nile-Sobat Livelihood Zone. This project is not expected to start until 2030.

No research is being undertaken on capture fisheries or aquaculture in South Sudan. Research, over and above routine data collection, is necessary so that fisheries management decisions can be based on robust information on the parameters affecting the fishery and the aquatic environment. Research needs institutions so most research will not happen until the Padak Fisheries Training Centre (Padak FTC) and the aquaculture centre are completed and staffed.



The national government and the states are expected to continue the CAMP development projects' activities. They will have received appropriate training and been provided with the wherewithal to undertake these routine activities under the respective development projects.

#### *2.5.5.4 Private sector*

The commercial businesses and activities that the private sector will be seeking to expand into include feedmills, value adding for local and export sales, aquaculture and ice production. Project profiles have been prepared for these activities, but the timing is completely up to the private sector, though some of the prerequisites for private sector investment in fisheries and aquaculture are government activities, that are mostly not in the fisheries subsector. However, within the fisheries subsector are the establishment of a Fisheries Law and a Competent Authority. More general prerequisites for encouraging the private sector include improvements in feeder roads, tax and other incentives for investment, and information systems which are covered by CAMP in Institutional Development. Other prerequisites include national and state governments fulfilling their responsibilities concerning security, corruption, trunk roads, ports, bridges, communications and utilities.

They will also need to train their staff, mostly in technical areas, to satisfy quality control rules and regulations in fish factories, fish farms and other facilities. The 04.20 Private sector fisheries and aquaculture technical training project cover this skills enhancement. The training would be provided as a part of the training institutions routine courses, and would be paid for by the private sector.

The private sector will make all the investment decisions, guided by the law, regulations and any license conditions they may be obliged to follow. The project profiles are therefore somewhat conjectural, merely pointing to the opportunities and ways they could be exploited.

## **2.6 Institutional development subsector**

### **2.6.1 Overview**

The Institutional Development (ID) subsector is described in detail in the Situation Analysis Report 2013/2015 (Annex IV)<sup>69</sup> and in the Development Options Analysis 2014 (Annex III).<sup>70</sup>

The primary role of the government in CAMP implementation will be to provide an enabling environment for agricultural development. In the long term, the role will be confined to policy formulation, the establishment of a legal and regulatory framework, the provision of public goods and services, and safety nets for the socially vulnerable. The government will not be a provider of goods and services that the private sector is capable of providing itself. However, South Sudan's private sector is still weak, partially because of poor infrastructure and a weak legislative framework. Therefore, in the short to mid-term, it will still be necessary for the public sector to play a large role in public service delivery.

In comparison to the large demand for public services, public sector institutional capacity to deliver is currently limited. Organizational capacity is limited by inadequate financial resources; human resource capacity is low; and, infrastructure is underdeveloped.

For effective and efficient implementation of CAMP, it will be necessary to develop coordination mechanisms between various key players such as the ministries of Agriculture, Forestry, Cooperatives and Rural Development (MAFCRD), Livestock and Fisheries Industries (MLFI), and Electricity, Dams, Irrigation and Water Resources (MEDIWR) - and also between national, state, and local governments. It will be essential to develop public sector capacity for efficient agricultural service delivery, which will encourage the private sector and produce market-led development for maximum impact.

The institutional development subsector focuses on the development and enhancement of the cross cutting and coordination functions of the public sector, particularly those of the CAMP implementing ministries. The areas of its projects are: (1) governance, accountability and decentralisation, (2) public financial management (PFM), (3) legislative framework, (4) research, extension and training services, (5) infrastructure and government office facilities and equipment, and (6) aid coordination mechanisms, resource mobilisation and collaboration with NGOs.

### **2.6.2 Key players**

Key players are both public sector institutions and private sector organisations.

The functions of the national lead ministries (MAFCRD, MLFI and MEDIWR) are critical. Also, state and local governments (county, payam and boma) are vital for service delivery to the private sector. Agricultural research, extension and training services should complement the quantity and quality of service delivery. These services can be provided by public research centres, universities, training centres and extension workers.

There are a number of development partners in South Sudan including NGOs (civil society organizations) and donors. Development partners can provide financial and/or implementation assistance. NGOs are vital at the field level. Donors assisting agricultural development include USAID, UN and its agencies, GIZ, CIDA, DFID, EU, and JICA; they are key in providing financial and implementation assistance.

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<sup>69</sup> Annex IV. Situation Analysis Report 2013/2015. Chapters 4, 5, 6, 7, 8 and 14.

<sup>70</sup> Annex III. Development Options Analysis 2014. Chapters 4 and 5.

However, government organisations, particularly state and local governments, are struggling to fulfil their roles in service delivery, and their coordination is neither effective nor efficient. To design and implement mechanisms to deliver agriculture services which encourage private sector and market-led development with minimal public sector resources, each government organisation must understand its role and employ the most efficient methods.

All functions of government organisations should be strengthened; its direct involvement in the agriculture sector is unavoidable, especially during the CAMP implementation period. Research, extension and training services are weak and should be revitalized. The private sector is key for economic growth and livelihood improvement, and agriculture sector transformation. However, it will take time for the public sector to fulfil its functions in the agriculture sector and to establish a favourable environment for the private sector. In the long term, the activities of development partners (financial and implementing) in the agriculture sector should be reduced as government organisations and the private sector are more able to provide services.

**Table 2-10: Current and target involvement of key players**

	Government	Public research, extension and training services	NGOs	Donors	Private sector
Current	++	+	+++	+++	+
Future	+++	+++	++	+	+++

Note: Extent of involvement: +moderately significant; ++significant; +++highly significant

Source: Annex IV. Situation Analysis Report 2013/2015. Section 5.2.

**Table 2-11: Level of government and their functions**

Level	Functions
National government	<ul style="list-style-type: none"> <li>• CAMP development and modification</li> <li>• Prioritization and planning of programmes/ projects</li> <li>• Resource mobilization</li> <li>• Intra-ministerial, inter-ministerial and external coordination</li> <li>• Budgeting and funding allocation</li> <li>• Programme/ project implementation</li> <li>• Monitoring and evaluation of policy/ programme/ project implementation</li> <li>• Supervision to state government, county, payam and boma</li> <li>• Technical support and backstopping for state government, county, payam and boma</li> <li>• Data collection and information sharing with state government, county, payam and boma</li> <li>• Enhancement of legal and regulatory framework</li> </ul>
State government	<ul style="list-style-type: none"> <li>• Support to CAMP development and modification</li> <li>• Prioritization and planning of programme/ projects</li> <li>• Intra-ministerial, inter-ministerial and external coordination</li> <li>• Budgeting and funding allocation</li> <li>• Programme/ project implementation</li> <li>• Monitoring and evaluation of policy/ programme/ project implementation</li> <li>• Supervision to county, payam and boma</li> <li>• Technical support and backstopping for county, payam and boma</li> <li>• Data collection and information sharing with county, payam and boma</li> <li>• Enhancement of legal and regulatory framework</li> </ul>
County	<ul style="list-style-type: none"> <li>• Service delivery planning/ service delivery</li> <li>• Programme/ project implementation</li> </ul>
Payam and boma	<ul style="list-style-type: none"> <li>• Service delivery</li> <li>• Programme/project implementation</li> </ul>

Source: Annex IV. Situation Analysis Report 2013/2015. Table 5-5.

Table 2-10 shows the current and target involvement of key players in the agriculture sector. Government organisations consist of 1) national government, 2) state government, 3) county and 4) payam and boma. Characteristics of each level of government with regard to CAMP implementation are shown in Table 2-11.

To implement decentralized service delivery, South Sudan faces many difficulties from policy making to implementation and enforcement of policy.<sup>71</sup> Responsibilities of ministries at the national level do not always correspond with those at the state level. Authority to set up ministries is given to each state, which may choose to divide responsibilities differently. This often causes confusion about the chain of command and misallocation or non-allocation of block grants (financial resources) from national to state ministries. Therefore, close coordination between different levels of government is important for CAMP implementation; this includes supervision, reporting, technical support and assistance, data collection, and information sharing and exchange. It is important to decentralize and strengthen the functions of state and local government in the agriculture sector. Table 2-12 shows the current and target situation for service delivery by government organisations under a decentralized service delivery scenario.

**Table 2-12: Service delivery by government under a decentralized service delivery scenario**

	National government	State government	County	Payam & Boma
Current	++	+	+	+
Future	++	+++	+++	++

Note: Extent of involvement: +moderately significant; ++significant; +++highly significant

Source: Annex IV. Situation Analysis Report 2013/2015. Sections 5.1, 5.2.

### **2.6.3 Overview of project rationale**

The situation analysis identified the opportunities, challenges and constraints summarised in Table 2-13, which also shows the projects proposed to address them and how the projects relate to the development themes.

The main opportunities for the development of the subsector are:

- Improve CAMP implementing ministries capacity concerning governance, accountability and decentralisation, and crosscutting issues such as gender mainstreaming;
- Strengthen use of public financial management system (PFMS);
- Strengthen legislative framework (policy, legal, regulatory, enforcement);
- Improve research, extension, and training services in the agriculture sector and encourage collaboration both nationally and regionally;
- Improve infrastructure related to the agriculture sector and government office facilities and equipment;
- Enhance current mechanisms of aid coordination, resource mobilisation and collaboration with NGOs.

<sup>71</sup> Annex IV. Situation Analysis Report 2013/2015. Section 5.1.7.

**Table 2-13: Institutional development: opportunities, challenges, development themes and projects**

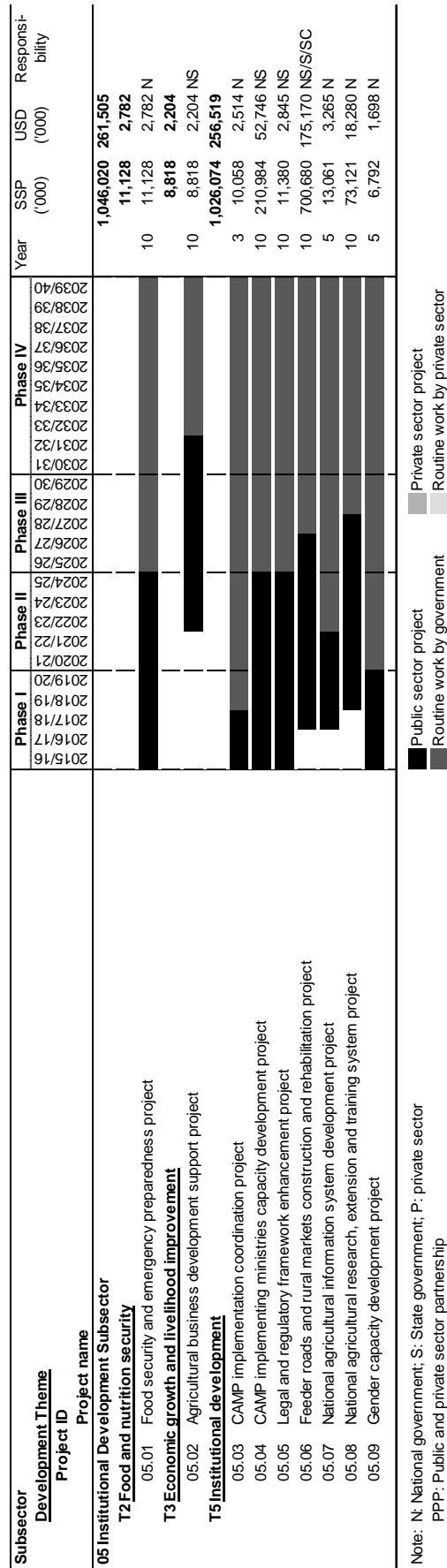
Opportunities
Challenges and constraints
Development Themes
Projects
<p><b>Improve CAMP implementing ministries capacity concerning governance, accountability and decentralisation, and crosscutting issues such as gender mainstreaming</b></p> <p>Need to develop ministries' organisational and human resource capacity with effective accountability and transparency and implement the decentralisation policy</p> <ul style="list-style-type: none"> <li>• Weak accountability and lack of transparency in national, state and local governments caused by unclear operational procedures (e.g. reporting procedures without guidelines and formats) and inconsistency in ministerial structures at the national and state levels</li> <li>• Limited number of staff and lack of managerial and technical capacity at all levels of government</li> <li>• Capacity of CAMP implementing ministries to work with gender issues is weak and gender is still not mainstreamed into policies, strategies and projects</li> <li>• Poor ability to collect, maintain and disseminate agricultural data and information</li> <li>• Weak implementation and coordination mechanisms for food security and emergency preparedness</li> </ul> <p><i>Institutional development</i></p> <ul style="list-style-type: none"> <li>05.04 CAMP implementing ministries capacity development project</li> <li>05.03 Support to CAMP implementation coordination task team project</li> <li>05.05 Legal and regulatory framework enhancement project</li> <li>05.10 Gender capacity development project</li> <li>05.07 National agricultural information system development project</li> </ul> <p><i>Food and nutrition security</i></p> <ul style="list-style-type: none"> <li>05.01 Food security and emergency preparedness project</li> </ul>
<p><b>Strengthen use of public financial management system (PFMS)</b></p> <p>Poor functioning of public financial management system (PFMS)</p> <ul style="list-style-type: none"> <li>• Inadequate funds for operating costs and capital investment associated with limited institutional and technical capacity</li> <li>• Limited PFMS capacity of state ministries and lower levels of government due to the lack of clear PFM procedures, inadequate deployment of accountants and other PFM-related officers, and absence of internal or external audits</li> <li>• Unclear cash flow procedures, misuse or misallocation of funds, and informal (illegal) taxation and bribes, etc.</li> </ul> <p><i>Institutional development</i></p> <ul style="list-style-type: none"> <li>05.04 CAMP implementing ministries capacity development project</li> </ul>
<p><b>Strengthen legislative framework (policy, legal, regulatory, enforcement)</b></p> <p>Inappropriate legal and regulatory framework and enforcement mechanism in agriculture sector</p> <ul style="list-style-type: none"> <li>• Limited number of laws and regulations passed by the National Legislative Assembly (NLA) and inadequate enforcement on the ground</li> <li>• Insufficient technical and financial support for legal and regulatory services from the national to the lower levels of government due to limited expertise and funds</li> <li>• Poor enforcement of laws and regulations and reporting of non-compliance by state governments</li> <li>• Unclear and incomplete legislative framework causing inconsistencies in implementation, adversely affecting agricultural production, marketing and processing in both rural and urban areas</li> <li>• Unfavourable environment for private sector and investors in the agriculture sector; lack of financial services and business development services which facilitate agricultural business development</li> </ul> <p><i>Institutional development</i></p> <ul style="list-style-type: none"> <li>05.05 Legal and regulatory framework enhancement project</li> </ul> <p><i>Economic growth and livelihood improvement</i></p> <ul style="list-style-type: none"> <li>05.02 Agricultural business development support project</li> </ul>
<p><b>Improve research, extension, and training services in the agriculture sector and encourage collaboration both nationally and regionally</b></p> <p>Insufficient research, extension and training services in the agriculture sector</p> <ul style="list-style-type: none"> <li>• Limited funds, qualified research personnel, demonstration farms and laboratories in existing public crop research centres</li> <li>• No dedicated research centres in the livestock, forestry and fisheries subsectors</li> <li>• Limited training for Agricultural Extension Officers (AEOs) and lack of funding, transport, facilities and equipment needed for delivering extension services</li> <li>• Lack of funding and qualified teaching staff, low quality of training curricula in existing public training centres</li> <li>• Minimal collaboration between research centres and training centres</li> </ul>

**Table 2-13: Institutional development: opportunities, challenges, development themes and projects (cont.)**

<b>Opportunities</b>
<b>Challenges and constraints</b>
<b>Development Themes</b>
<b>Projects</b>
<ul style="list-style-type: none"> <li>• Lack of oversight and secretariat entity to promote, coordinate and facilitate research, training and extension services comprehensively</li> </ul> <p><i>Institutional development</i> 05.08 National agricultural research, extension and training system project</p>
<p><b>Improve infrastructure related to the agriculture sector and government office facilities and equipment</b></p> <p>Inadequate infrastructure to allow timely and effective service delivery and allow growth of a market economy</p> <ul style="list-style-type: none"> <li>• Inadequate feeder roads and rural market facilities which facilitate agricultural production and economy</li> <li>• Lack of measures to secure costs for procurement, maintenance and operation of assets and to utilise such assets productively and sustainably</li> </ul> <p><i>Institutional development</i> 05.06 Feeder roads and rural market construction/ rehabilitation project</p> <p>Insufficient government office facilities and equipment</p> <ul style="list-style-type: none"> <li>• Insufficient government office facilities and equipment such as buildings, office supplies, ICT equipment and vehicles especially at the state and county government offices</li> <li>• Lack of measures to secure costs for maintenance and operation of assets and to utilise such assets productively and sustainably</li> </ul> <p><i>Institutional development</i> 05.04 CAMP implementing ministries capacity development project</p>
<p><b>Enhance current mechanisms of aid coordination, resource mobilisation and collaboration with NGOs</b></p> <p>Poor intra-ministerial, inter-ministerial and external coordination and communication within the public sector and with DPs, NGOs and other stakeholders</p> <ul style="list-style-type: none"> <li>• Weak government leadership in the aid coordination mechanism, caused by inadequate consolidation of agriculture sector policies and short-, medium-, and long-term development plans within the national government; and insufficient alignment of sector priorities with the international and regional agenda</li> <li>• Dependency of the government and DPs on substitution systems managed by NGOs, weakening government capacity and perpetuating DPs' reluctance to provide direct support to the government for service delivery</li> </ul> <p><i>Institutional development</i> 05.03 Support to CAMP implementation coordination task team project</p>

Figure 2-5 shows the investment planning space of the institutional development subsector, which describes development themes, project titles, estimated project costs and the sequence of project implementations according to project priorities and the funding availability.

Figure 2-5: Investment planning space (IPS) for the ID subsector



Note: N: National government; S: State government; P: private sector  
PPP: Public and private sector partnership

## **2.6.4 Justification of projects by development theme**

### **2.6.4.1 Reconstruction and recovery**

The institutional development subsector does not have any project profiles under this development theme. Profiles related to this theme are under the institutional development theme.

### **2.6.4.2 Food and nutrition security**

#### **Implementation and coordination mechanism for food security and emergency preparedness**

In October 2012 about 40% of the South Sudanese population was still at risk from famine.<sup>72</sup> However, the relevant government organisations do not have enough capacity to handle such issues. The 05.01 Food security and emergency preparedness project is designed to mitigate the effects of food insecurity in South Sudan through the establishment of effective and efficient food security and emergency preparedness mechanisms which allow 1) efficient food procurement and distribution, 2) better food emergency management, and 3) improved coordination, supervision and operation of food security functions by the South Sudan Food Security Council (SSFSC).

### **2.6.4.3 Economic growth and livelihood improvement**

#### **Support to agricultural businesses**

The private sector will build and sustain agriculture in South Sudan. Agricultural business investors need to feel safe (physically and monetarily) when investing in South Sudan. The government has to provide this environment; however, the current legislative framework does not do this. To address this issue, it will be necessary to facilitate inter-ministerial coordination between the Ministry of Commerce, Industry and Investment and other ministries, including the CAMP implementing ministries. The 05.02 Agricultural business development support project will cover 1) technical support to develop financial services, 2) development of business development services, 3) establishment of the necessary legislative framework, and 4) establishment of necessary coordination mechanisms.

### **2.6.4.4 Agriculture sector transformation**

This theme concentrates on increasing value-added agricultural outputs which are competitive in international and regional markets. Currently, institutional development subsector has no project profiles under this development theme.

### **2.6.4.5 Institutional development**

#### **CAMP implementing ministries capacity**

There is low government organisational, human resources and infrastructure capacity. The public financial management system (PFMS) does not function well. This capacity is less at the state and local government levels than at the national level. If any one of these three capacity components is weak, then the implementing ministries and their staff will not be able to work towards CAMP's objectives in an efficient and effective manner. The government has not yet satisfactorily implemented decentralisation, especially with respect to financial accountability and transparency. The 05.04 CAMP implementing ministries capacity development project is designed to allow the government to deliver quality services to the agriculture sector. Gender capacity development within the three implementing ministries is essential to ensure that both women and men participate in and benefit from the sector's transformation from subsistence to market oriented commercial activities. The 05.09 Gender capacity development project is designed to 1) strengthen the

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<sup>72</sup> Annex IV. Situation Analysis Report 2013/2015. Section 7.2.



capacity of the three implementing ministries to work with gender issues, 2) mainstream gender into policies, strategies, and projects, and 3) implement programs stemming from ministerial policy.

### ***Coordination mechanism for CAMP implementation***

CAMP will require an implementation mechanism as it includes projects in the crop, livestock, forestry and fisheries subsectors, as well as crosscutting projects in the institutional development subsector. This mechanism should be able to promote, coordinate and facilitate the implementation of the many projects that have been identified through the formulation process. The 05.03 Support to CAMP implementation coordination task team project is designed to develop the capacity of the CAMP Implementation Coordination Task Team<sup>73</sup> to 1) promote, coordinate and facilitate the ongoing implementation of CAMP identified projects and 2) ensure an integrated approach to CAMP implementation.

### ***Legal and regulatory framework and enforcement mechanism***

The legislative framework is currently weak due to the limited number of laws and regulations passed by the National Legislative Assembly (NLA); additionally there is inadequate enforcement on the ground. Technical and financial support for the effective implementation of legal and regulatory services from the national government to the state and local governments currently is not sufficient due to limited expertise and funds in the national government itself. The state governments do not even report the status of legal and regulatory services to the national government. The 05.05 Legal and regulatory framework enhancement project is designed to help produce the necessary laws and regulations, and enforcement mechanisms in each agricultural subsector. It will also develop the capacity of the three CAMP implementing ministries to carry out these functions.

### ***Infrastructure development***

Infrastructure is the foundation of agricultural development and economic growth and can facilitate timely and effective service delivery and uplift the market economy. There is a strong need to establish and maintain a network of feeder roads and rural market facilities. The 05.06 Feeder roads and rural market construction/ rehabilitation project is designed to support economic development in rural areas by removing infrastructure constraints, which will reduce rural transport costs for goods and passengers, and support farm production and marketing. Other subsector specific infrastructure needs are dealt with by other subsectors' projects. Major infrastructures needs, such as main and interstate roads and electrification facilities, lie outside the jurisdiction of MARFCRD and MLFI and are not dealt with by this subsector.

### ***Collecting, maintaining, and disseminating agricultural data and information***

A comprehensive and reliable data and information system for the agriculture sector is vital for planning, implementation and monitoring and evaluation for the various CAMP projects. The collection and compilation of agricultural statistics is also important for preparing various indices of the economy reflecting the progress and contribution of the agriculture sector. The 05.07 National agricultural information system development project is designed to address the current deficiencies in collecting, maintaining and disseminating agricultural data and information.

### ***Research, extension and training services***

Although there are several current public research and training centres in South Sudan, almost all centres have problems with funding, number and quality of staff, quality of

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<sup>73</sup> At the CAMP Technical Committee meeting in November 2014, the three CAMP implementing ministries agreed to set up a special task team, the CAMP Implementation Coordination Task Team (CAMP ICTT) during the first half of 2015.

services and training curricula, and facilities and equipment. Collaboration among centres in the same field, and between research and training centres and extension services, is minimal and, as a result new knowledge or skills are seldom produced and/or shared. The 05.08 National agricultural research, extension and training system project is designed to address these issues.

### 2.6.5 Implementation priorities

The likely limited funds available for institutional development will limit what can be implemented. The institutional development subsector cannot expect to start all its development projects immediately. However, all institutional development projects are very important and some are prerequisites for implementation of other subsectors' projects. Projects in other subsector cannot succeed without the resolution of issues identified by the institutional development subsector. The projects have been prioritised as shown in Table 2-14.

**Table 2-14: Institutional development projects sequencing**

Category	Camp projects
High Priority	05.03 Support to CAMP implementation coordination task team project 05.04 CAMP implementing ministries capacity development project 05.05 Legal and regulatory framework enhancement project 05.01 Food security and emergency preparedness project 05.06 Feeder roads and rural market construction/ rehabilitation project 05.07 National agricultural information system development project
Medium Priority	05.02 Agricultural business development support project 05.08 National agricultural research, extension and training system project 05.09 Gender capacity development project
Longer term	N/A

#### 2.6.5.1 High Priority

High priority projects are mainly ones which have the greatest impact on beneficiaries or are a prerequisite to other subsectors' projects. Even if there are limited funds available, it is important to commence these projects as soon as possible.

The 05.03 Support to CAMP implementation coordination task team project is essential to support a successful CAMP implementation. Similarly, the 05.04 CAMP implementing ministries capacity development project will ensure a successful CAMP implementation by addressing capacity limitations at the implementing ministries. The establishment of a legislative framework and its enforcement has to be high priority since so few laws and regulations exist. The 05.05 Legal and regulatory framework enhancement project addresses these issues. The 05.07 National agricultural information system development project will set up an information system to allow better planning and decision making during CAMP implementation.

The 05.01 Food security and emergency preparedness project is directly relevant to the many people at risk of food insecurity in South Sudan. The 05.06 Feeder roads and rural market construction/ rehabilitation project, which will reduce rural transport costs for goods and passengers and support farm production and marketing.

#### 2.6.5.2 Medium priority

These institutional development projects are also prerequisites for other subsectors' projects but are less urgent.

The 05.02 Agricultural business development support project will establish a favourable environment for private sector and investors. The 05.08 National agricultural research, extension and training system project will develop capacity in research, extension, and training institutions and help develop collaboration between them. The 05.09 Gender capacity development project will strengthen the capacity of CAMP implementing ministries to work with gender issues.

### 2.6.5.3 Longer term

All institutional development projects are expected to start early in the CAMP implementation period because of their importance and relevance to the other subsectors. Therefore, there are no longer term projects. However, all levels of government are expected to continue benefiting from the institutional development subsector's activities. The beneficiaries will have received appropriate training and be able to undertake the routine activities expected in the various projects.

### 2.6.6 Cross-cutting relationships with other subsector projects

The institutional development subsector is handling major cross-cutting issues. Therefore, its projects affect other subsectors' projects. The cross-cutting relationships between institutional development projects and other subsector projects are shown in Table 2-15. For example, all subsectors have projects that address shortcomings in the legislative framework. The institutional development subsector will be responsible for addressing these issues generally, whereas each subsector will be responsible for legislation specific to their subsector. Other examples include projects concerning the agricultural business environment or capacity development. It will be important to avoid duplication between subsector projects. Coordination and collaboration with other subsectors will be necessary as projects are planned and implemented. This will be a function of the 05.03 Support to CAMP implementation coordination task team project.

**Table 2-15: Cross-cutting relationships with other subsector projects**

<b>05.02 Agricultural business development support project</b>
Crop:
01.33 Private sector investment project
01.07 Promotion of market oriented farming project
01.20 Enhancement of private sector agro-input providers project
01.21 Enhancement of tractor hire service providers project
01.05 Farmers organisation support project
Livestock:
02.07 Development of livestock marketing project
Forestry:
03.07 Market development and promotion for commercial forest products project
Fisheries:
04.02 Microcredit for fishing communities
04.05 Private sector promotion of small scale aquaculture investment
04.14 Private sector promotion of value adding for local and export markets
<b>05.04 CAMP implementing ministries capacity development project</b>
Crop:
01.34 Quality standards and quality control for agricultural products project
Livestock:
02.28 Livestock public sector institutions capacity development project
Forestry:
03.15 Forestry institutional and human resources capacity development project
Fisheries:
04.23 State aquaculture training project;
04.24 State fisheries services capacity development project

**Table 2-15: Cross-cutting relationships with other subsector projects (cont.)**

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<b>05.05 Legal and regulatory framework enhancement project</b>
Crop: 01.36 Establishment of firm legislative framework project 01.37 Enhancement of laws and regulations enforcement project
Livestock: 02.01 Grazing allotments and land-tenure project 02.03 National and state livestock policy and legal framework establishment and maintenance project
Forestry: 03.14 Forest policy and legal framework establishment and maintenance project
Fisheries: 04.01 Fisheries and aquaculture law project
<b>05.07 National agricultural information system development project</b>
Livestock: 02.02 Livestock census, disease surveillance, and information management project
Forestry: 03.12 National forest resource inventory, information and management plans project
Fisheries: 04.04 Fisheries information and fisheries resources management systems development project 04.06 Routine fisheries information and resource management
<b>05.08 National agricultural research, extension and training system project</b>
Crop: 01.17 Development of research capacity project 01.18 Development of research institution infrastructure project 01.09 Strengthening of extension service delivery project 01.03 Strengthening and establishment of training institution infrastructure project 01.22 Establishment and enhancement of agricultural vocational institutions project 01.23 Establishment and enhancement of national higher educational institutions for agricultural project
Livestock: 02.25 Creation of livestock research centres project 02.26 Development of livestock extension systems including community animal health works (CAHWs) project
Forestry: 03.13 Establishment of the South Sudan Forest Research Institute project
Fisheries: 04.17 Establishment of fisheries training and research institute project 04.18 Establishment of national aquaculture research and training centre project 04.21 Regional fisheries and aquaculture research project 04.22 Strengthening of fisheries and aquaculture research project
<b>05.09 Gender capacity development project</b>
Gender is addressed in all CAMP projects.

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### **3. Justification of and approach to agriculture development**

#### **3.1 Agriculture sector and players for CAMP implementation**

Since the estimated public resources available for CAMP implementation (see Section 3.2) are limited, the public interventions under CAMP have to be cost effective and well designed so as to mobilise economic and social incentives, for private sector players and markets, at the lowest possible costs. For example, if stimulation of incentives for many private sector players and markets can be achieved by targeted public interventions to a small but important segment of the value chain, such as a group of innovative producers and processors, the outcomes and impact of such interventions would be cost effective. To design such interventions, an in-depth understanding of the agriculture sector and the characteristics of the private sector players and markets is needed. At the same time, the issues of the inadequate performance of the government and its expected role in fulfilling development needs are described in order to provide guidance for designing and implementing proposed public service delivery interventions.

##### ***3.1.1 Agriculture sector, players and markets***

In order to discuss targeted and cost effective public interventions, the development environment for the agriculture sector is described in terms of 1) agriculture sector, 2) private sector players and markets, and 3) public sector players and their relationships with one another (Figure 3-1).

The agriculture sector has several facets: historical, socioeconomic and institutional. It is the impact (economic growth and social gains) on the agriculture sector that will be used to measure the overall success of CAMP implementation. Identification of the development potential, constraining factors and institutional issues are based on an understanding of the current situation of the agriculture sector. In the agriculture sector the private sector players and markets, and public sector players together produce impacts on the agriculture sector.

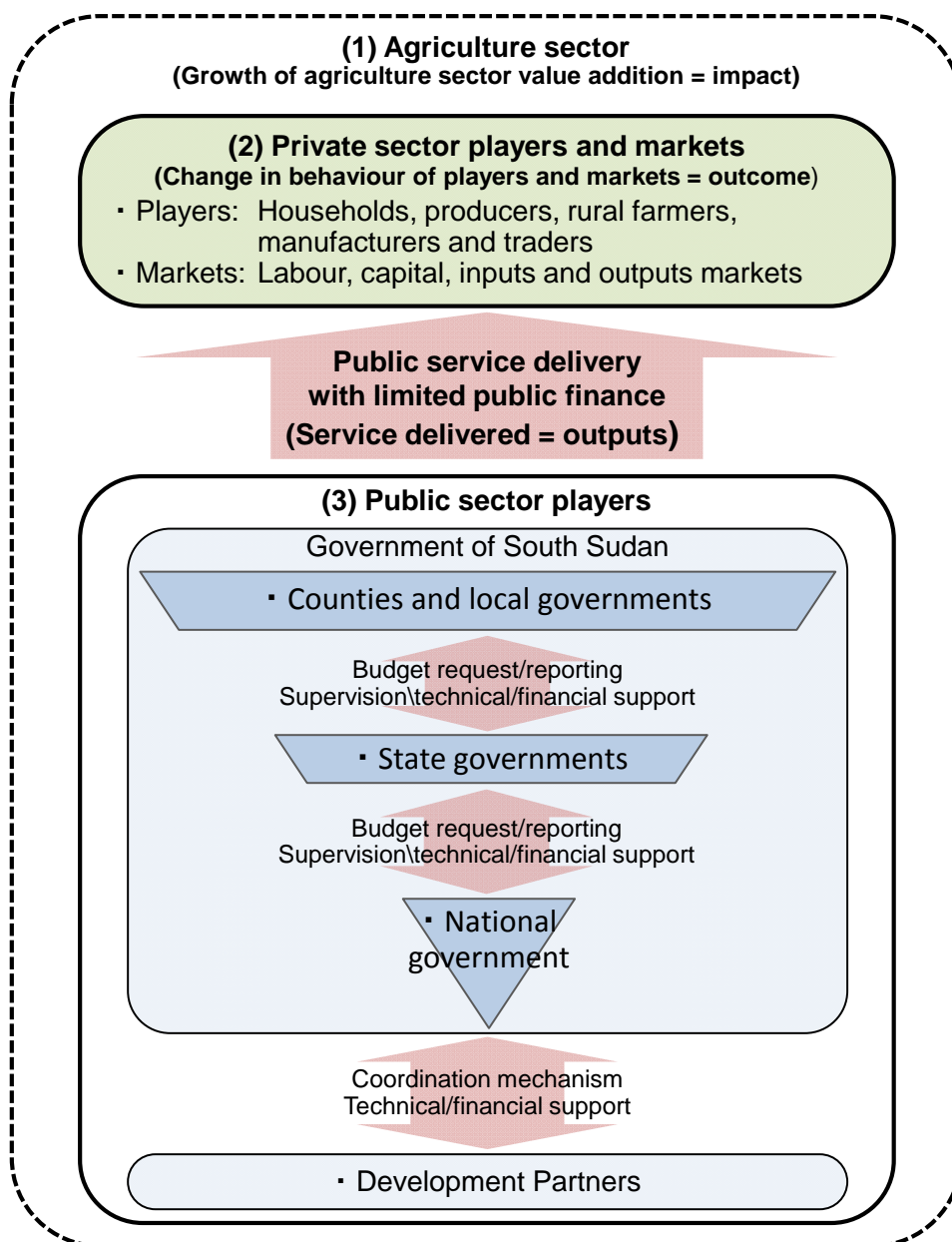
The private sector players and markets are targets of public service delivery. Outcomes of service delivery are changes in the production, processing, marketing and trading practices of the private sector players and consumer behaviour across the value chains of agricultural products. This will gradually result in capital accumulation, increase in labour and capital productivity, and consequent agriculture sector growth and transformation. In-depth understanding of private sector players and markets and their production and market decision-making processes is the key to design and implement successful and cost effective interventions.

Public sector players are the government of South Sudan which includes national, state and local (county, payam and boma) governments, and development partners. For CAMP implementation, local governments, particularly county governments, are the frontline public service delivery agents, supported by the state and national governments. The expected roles and functions of each level of government are clearly defined as it will be the government that generates the outputs necessary to achieve outcomes and, ultimately, impacts. Since expected availability of the financial resources for CAMP implementation is very limited (see Section 3.2) cost efficient and effective service delivery in terms of generation of outputs and outcomes must be achieved.

Based on the above description of the development environment of the agriculture sector, the concepts of outputs, outcomes, impacts, and efficiency and effectiveness of public service delivery are defined. These concepts will also be used for monitoring and evaluation during the CAMP implementation:

- Outputs: generated directly by delivery of public services by public sector players, measured by indicators such as number and amount of extension services, roads, bridges, etc.
- Outcomes: economic and social behaviour changes of private sector players and markets due to provision of public services, measured by socioeconomic variables such as increase in labour productivity by adoption of new technologies, change in net value added etc.
- Impact: increased or decreased value added (i.e. GDP) in the agriculture sector.
- Efficiency of public service delivery: measured by output provided per unit cost (for example, cost to train one extension worker).
- Effectiveness of public service delivery: measured by comparing the cost to provide the services with the change in behaviour of private sector beneficiaries (or outcome) generated by the services.

**Figure 3-1: Development environment of the agriculture sector**



### **3.1.2 Current situation of the agriculture sector**

The agriculture sector in South Sudan is not fulfilling its perceived high development potential. During the CAMP situation analysis (Annex IV) this high potential was reaffirmed, based on a historical review of the sector and an examination of the current investment opportunities. Previous successful investments in agriculture encouraged formulation of the CAMP investment plan, but served as a reminder that peace and stability are essential for agriculture to thrive. The situation analysis also revealed that the sector is seriously underperforming due to constraints and challenges affecting agricultural development. Understanding the constraints and challenges leading to underperformance will permit the design of interventions to manage them, and so achieve agriculture sector development.

#### **3.1.2.1 Potential of agriculture sector**

The underdevelopment of South Sudan is deeply rooted in Sudan's modern economic system that emerged during the colonial era and survived the subsequent civil war.<sup>74</sup> Development efforts are severely constrained by the outcome of more than 100 years of neglect and destruction, for example, the absence of infrastructure, legal and institutional frameworks, education, training, and research, discontinuity of economic activity, illiteracy, poor health, and protracted conflicts and insecurity. However, the former Southern Regional Government attempted various agriculture and rural development projects, particularly during the peace period (1972-1983). Examples of successful projects include the Zande Scheme,<sup>75</sup> started in the mid-1940s under the British colonial administration; and the expansion of forest plantations for commercial timber production in the early 1980s.<sup>76</sup> This indicates the potential of agriculture-based development in the country.

South Sudan has a largely unrealised agricultural potential.<sup>77</sup> Over 95% of the total area (658,842 km<sup>2</sup>) is considered suitable for agriculture, 50% of which is prime agricultural land where soil and climatic conditions allow for production of a variety of crops and livestock. A large part of the country, particularly the southern part, has high rainfall for 8-9 months a year, ranging from 500-600 mm/year to more than 1,500 mm/year. Despite the abundant water resources, 97% of the lands used for farming are not irrigated, which implies a potential for irrigated agriculture equipped with appropriate facilities and technology.

South Sudan has the sixth largest livestock herd and the highest livestock per capita holding in Africa with an estimated livestock population of 11.7 million cattle, 12.4 million goats and 12.1 million sheep. These vital resources have an asset value estimated at SSP 7 billion and account for 15% of GDP. Considering the vast land suitable for livestock rearing, the country has a great potential to meet the domestic demand for livestock products, export surpluses and improve the livelihoods of the population that depend on the subsector, particularly pastoralists and agro-pastoralists predominating in the dry lands of the country.

Dense forests occupy about 25% of the total land area, mainly in the Greater Equatoria, Greater Bahr el Ghazal and Upper Nile state. The economic potential of forest resources is deemed significant, though data on the resources are not sufficient as records were lost during the war. In addition to teak plantations of an estimated area from 5,000 to 8,000 ha, there are large areas of natural indigenous forest with African mahogany and other commercial species. Non-wood natural products include medicinal plants, spices, gum acacia (or gum Africa), rubber and silk.

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<sup>74</sup> Annex IV. Situation Analysis Report 2013/2015. Section 2.1.

<sup>75</sup> Annex IV. Situation Analysis Report 2013/2015. Section 2.1.1.

<sup>76</sup> Annex IV. Situation Analysis Report 2013/2015. Section 12.6.4.

<sup>77</sup> Annex IV. Situation Analysis Report 2013/2015. Section 2.4.

The potential sustainable fisheries production from the River Nile, Sudd region, and Bahr el Gazal and Sobat rivers and floodplains has variously been estimated to range between 100,000 and 300,000 tons per annum. Catches are currently less than the lower estimates, so there is probably some room for expansion. A very large potential for aquaculture development exists particularly in the Greenbelt Livelihood Zone which has permanent water and an ideal climate. Both large-scale commercial farming near the main population centres and subsistence type agriculture/aquaculture systems hold great promise.

Although official estimates of GDP by sector data are not yet available the importance of agriculture in the national economy is widely recognised by the government and the international community as shown in Table 3-1. The 2008 Population Census indicates that 63% of those aged 15 and above, who are working or who worked previously, were employed in agriculture, animal husbandry, forestry, fisheries and mining, though employment patterns are likely to have changed since 2008 due to the large influx of returnees. A strategy note recently published by the World Bank says that subsistence agriculture and pastoralism account for less than 15% of GDP, but engage about 78% of the population.<sup>78</sup> In view of the projected decrease in oil production, future economic growth in South Sudan is expected to be mainly dependent on the agriculture sector.

**Table 3-1: Shares of agriculture in the national economy**

Indicator	Estimate	Date	Source
GDP	15% of GDP	2010	World Bank
Employment	63% of working population (aged 15 and above)	2008	SSCCSE
	78% of total population	Unknown	World Bank
Trade	Imports: 12% of GDP	2010	MoFEP
	Exports: Less than 1% of GDP	2010	MoFEP
	Trade deficit: 11-12% of GDP (SSP3.5 billion)	2010	MoFEP
Rural population	83% of total population	2008	SSCCSE
Households			
Engaged in cultivation	81% of total households; 89% of rural households	2008	SSCCSE
Engaged in fisheries	22% of total households; 24% of rural households	ditto.	ditto.
Owing livestock	74% of total households; 80% of rural households	ditto.	ditto.
Main source of livelihood			
Crop farming	69% of total population; 78% of rural population	2009	NBS
Animal husbandry	7% of total population; 8% of rural population	2009	NBS

Sources:

World Bank - IDA and IFC, 2013. *Interim Strategy Note (FY2013-2014) for the Republic of South Sudan*. Washington D.C.: World Bank. p. 6 and p. 36.

SSCCSE - Southern Sudan Centre for Census, Statistics and Evaluation. 2010. *Southern Sudan Counts: Tables from the 5th Sudan Population and Housing Census, 2008*. Juba: GOSS/SSCCSE. pp. 85-86 and p. 109.

MoFEP - Government of the Republic of South Sudan. 2012. *Approved Budget 2012/13*. Juba: GRSS. p. 12.

NBS - National Bureau of Statistics. 2012. *National Baseline Household Survey 2009*. Juba: NBS. pp. 32-33.

### 3.1.2.2 Underperformance of the agriculture sector

Despite the large agricultural potential, South Sudan has been suffering from low agricultural performance, high food insecurity and pervasive poverty, particularly in rural areas. Partial evidence has suggested that agricultural activities have expanded somewhat since the signing of the CPA but seemingly not to such an extent that it has a significant impact on the economy.<sup>79</sup> The annual food balance estimated by the FAO/WFP Crop and Food Security Assessment Mission (CFSAM) suggests the continuing chronic cereal deficit in the country. For example, although cereal production increased to 761,000 tons in 2012 from 563,000 tons in 2011 due to favourable rains and no outbreaks of pests and diseases, the overall

<sup>78</sup> IDA and IFC 2013. *Interim Strategy Note (FY2013-2014) for the Republic of South Sudan*. Washington D.C.: World Bank. p. 6. The sources of these numbers are not shown in the document.

<sup>79</sup> Annex IV. Situation Analysis Report 2013/2015. Section 2.4.



cereal deficit was estimated to be nearly 371,000 tons and about 4.1 million people, nearly 40% of the total population, faced food insecurity in 2013<sup>80</sup> even before the occurrence of the political crisis. The situation has worsened since then. The annual food balance (consistently a deficit) highlights the importance of agriculture to South Sudan in terms of food production and foreign exchange needed to meet the deficit.<sup>81</sup>

The large food deficits in recent years are caused by a combination of factors such as the continued influx of returnees and associated urbanisation, population growth and unstable production affected by natural calamities. The shortfall has been supplemented with food imports and food aid.

Agricultural productivity and value added remains low.<sup>82</sup> Both cereal production and area harvested fluctuate from year to year and the yield remains low, which was estimated at 0.88 tons/ha (gross) on average and ranged from 0.4 tons/ha in Unity State to 1.25 tons/ha in Western Equatoria State in 2012. Livestock numbers are reported to be increasing, though no official estimate is available. Based on its observations on death, reproduction and retention of cattle, FAO/WFP CFSAM has concluded that the cattle population growth rate used in Ethiopia, 0.06% per annum, can be applied to South Sudan. However, the growth rate is much lower than those of other neighbouring countries, for example, Uganda's rate of 3% per annum between 2008 and 2011. Agricultural value added estimated by the World Bank shows negative growth in 2009 and 2011.

Unmanaged over exploitation of natural resources is causing land degradation, unsustainable utilisation and extraction of natural and plantation forests.<sup>83</sup> While some agroforestry and small-scale plantations have been developed in the Greater Equatoria region, teak plantations and woodlots for sustainable production are not fully exploited.<sup>84</sup>

Traditional and micro- and small-scale informal enterprises oriented to marketing agriculture, livestock, forestry, and fisheries products and services dominate the sector. Very few large-scale private investments can be found in the sector, and a limited volume of a few specific products are exported to regional and global markets. This can be attributed to the lack of a legal framework, poor infrastructure, inadequate government technical and regulatory support and a speculative market environment.

### *3.1.2.3 Security, conflicts, reconstruction and recovery*

The legacy of war in the form of insecurity and violence in South Sudan significantly undermines steady development of the agriculture sector.<sup>85</sup> Maintaining social cohesion in a country which has more than 60 ethnic groups and 80 linguistic groups is a big challenge. Disputes between pastoralists, settled farmers and river basin users over natural resources are common in most states. Ethnicity has often been manipulated to foster discord when it served political interests. Once fighting starts the conflict continues regardless of its actual causes.

In support of the peace and reconciliation process, the international community and UN agencies are implementing a significant number of programmes and projects. The churches also play an important role; throughout the decades-long civil war, they were the only stable

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<sup>80</sup> FAO/WFP. 2013. *Crop and Food Security Assessment Mission to South Sudan Special Report*. 22 February. Rome: FAO/WFP. p. 5.

<sup>81</sup> Annex IV. Situation Analysis Report 2013/2015. Table 2.11.

<sup>82</sup> Annex IV. Situation Analysis Report 2013/2015. Section 2.4 and Figure2-10.

<sup>83</sup> Annex IV. Situation Analysis Report 2013/2015. Section 3.4.2.

<sup>84</sup> Annex III. Development Options Analysis 2014. Table 5-12.

<sup>85</sup> Annex IV. Situation Analysis Report 2013/2015. Section 8.4 and Chapter 17.

institutions. Local leaders from the warring communities, such as chiefs in bomas, payams and counties, have been preaching peace and reconciliation among their communities.

The disruption of agricultural production, along with the 1.3 million IDPs displaced from their homes by political unrest and ethnic violence since December 2013, is an example of the very destructive consequences of chronic instability and insecurity. According to the UN Crisis Response Plan of May 2014, 4 million people would face acute food insecurity and 7.3 million people would be at risk of food insecurity by August 2014. The livelihoods of millions of people are disrupted since they are unable to farm, access their normal food sources or migrate with their livestock. Food security is deteriorating most in Jonglei, Upper Nile and Unity States where 49 to 85% of the population are at acute risk. Even before the conflict, these states were the most food insecure. Insecurity also adversely affects public service delivery.

#### *3.1.2.4 Sociocultural and gender factors*

Sociocultural factors have a significant influence on development activities and can be major constraints to their effectiveness and sustainability. Language differences and illiteracy can impede communication and coordination unless they are taken into account. Cultural differences among farmers and pastoralists, as well as differences in their resource endowments such as natural resources, land and labour available for production can be root causes of the conflicts in the rural areas.

The degree of gender disparity along cultural lines can influence women's access to land and participation in decision-making and agricultural activities. There still remain large gender disparities in South Sudan.<sup>86</sup> For example, the gross enrolment rate of primary education, net attendance rate of primary education and literacy rate show that there are fewer educational opportunities for women. Women's net attendance rate is 28% lower than that of men; the female literacy rate is less than half of men's. The maternal mortality rate is one of the highest rates in the world due to insufficient medical and health services. In addition, it is reported that women rarely have ownership of land, dwellings or livestock. Other example of gender disparity is that households headed by females have less food than male headed households.

#### *3.1.2.5 Macroeconomic environment*

The socioeconomic impacts of the civil unrest that began in December 2013 are enormous. However, even before this, South Sudan's volatile macroeconomic situation, together with poor infrastructure and weak institutional framework, had a negative impact on the growth of the agricultural and other sectors.

The national economy is largely affected by fluctuations in oil prices and revenues, and thus the regional and world economic situation can have a significant influence on the course of agricultural development, through changes in the macroeconomic environment. The country achieved moderate economic growth during the period 2008-2011, but it was mainly brought about by oil revenues that accounted for around 60% of GDP and, therefore, the growth slowed down when oil GDP declined.<sup>87</sup>

Prior to independence South Sudan was suffering from the Dutch disease that makes non-oil exports less competitive<sup>88</sup> and leads to a stronger local currency; this had a negative impact on the export of agricultural products as the oil sector was the major part of the GDP.

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<sup>86</sup> Annex IV. Situation Analysis Report 2013/2015. Section 8.3.

<sup>87</sup> Annex IV. Situation Analysis Report 2013/2015. Table 2-6.

<sup>88</sup> Annex III. Development Options Analysis 2014. Section 2.3.2.

At the same time South Sudanese economy is volatile and susceptible to various shocks. For example, the short lived high inflation after independence seems to have had a negative impact on the overall performance of the agriculture sector. Sudden increases in demand for imported food and other essential goods due, to a massive influx of returnees, is another example. The failed labour market in the rural areas is also a serious issue. High labour costs are not matched by increased agricultural productivity making it not cost effective to employ labour in rural areas, despite wide-spread unemployment; this has further impeded agricultural development.

The economy also has been constrained by high transaction costs due, for example, to trade restrictions on the northern border, import bottlenecks on the southern border, poor transport infrastructure and security challenges within the country and a decline in food production.

### *3.1.2.6 Infrastructure*

Infrastructure, particularly transport and communication, significantly affects the overall capacity to move people, inputs and output, and to send and receive information in the agriculture sector.

#### **Transport**

Weak transport infrastructure has been a major obstacle to food security and agricultural development in South Sudan.<sup>89</sup> There are many areas that cannot be reached by road particularly during the rainy season, and transport vehicles are in short supply. Farmers under these conditions are difficult to reach with improved technology. It also serves as a disincentive for farmers to produce surplus crops, as farmers find it expensive and very difficult to transport surpluses to the markets. Transportation costs are by far the largest cost component of food marketing, because of the poor state of transport infrastructure; they accounts for 15-50% of marketing costs depending on the commodity.<sup>90</sup> The FAO/WFP 2008 mission concluded that there was a need for a concerted effort to rehabilitate/build feeder and trunk roads.

#### **Communication**

Poor communication infrastructure imposes additional constraints on agricultural development in South Sudan. Not only farmers, but also government staff's access to mass media, such as publications, radios, or television, and to information and communication technology (ICT) is limited; this limits their knowledge and information on options available for technology, production, marketing, planning, monitoring and reporting. The recent development of communication by mobile phone, however, seems to have greatly improved communication throughout the country. Information available via mobile phones, such as market prices and weather forecasts, would help farmers gain higher profits, prevent crop losses, and mitigate effects of natural calamities,<sup>91</sup> and allow government staff to take necessary measures more quickly and report more efficiently.

### *3.1.2.7 Legal and institutional frameworks*

Legal and institutional frameworks, including government, legislation, justice, policies, public finance, and land administration have a significant influence on the course and outcome of agricultural development. Most of them, particularly government and public finance, are important instruments for agricultural development. These crosscutting frameworks have not been well coordinated in the past.

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<sup>89</sup> Annex III. Development Options Analysis 2014. Section 2.5.

<sup>90</sup> Annex IV. Situation Analysis Report 2013/2015. Section 5.4.6.

<sup>91</sup> World Bank. November 2011. ICT in Agriculture Connecting Smallholders to Knowledge, Networks, and Institutions. e-Sourcebook. Washington, D.C.: World Bank. p. 5.

### **Government systems**

The country's five-tier decentralised system (nation, state, county, payam and boma) is of prime importance to CAMP not only because of the government's decentralisation policy but also because of the localised nature of agriculture. Almost 20 years after its introduction, institutional, human and physical capacity remains a major challenge at all levels.<sup>92</sup> Most states face serious public finance management problems, characterised by weak financial accountability and reporting, ineffective controls and lack of transparency. This problem is compounded by the complex governance structures, with weak inter-ministerial and inter-governmental coordination. Each state has its own legislative council and authority to levy taxes, in addition to taxes levied by the national government, which makes it difficult for the national government to monitor the states' budget utilisation and revenue mobilisation.

### **Land tenure**

Access to land, tenure security and land use is a key factor of agricultural development.<sup>93</sup> However, lack of a strong institutional and legal framework for land classification, land uses and ownership has led to unsustainable uses and inequitable distribution of land resources. Land rights are not secured for socially vulnerable people, such as women, returnees and IDPs. Despite the adoption of the Land Act in 2009 and the Land Policy in 2013, land administration systems for public, private and community land are weak due to the absence of: a comprehensive land classification map, enforcement of land use plans according to the existing land law, an audit and monitoring system, dispute mitigation mechanisms and procedures, and clear procedures for land acquisition. As a result of the civil war, customary laws have been weakened and are no longer effective in securing equal land rights for every community member. Limited access to land is currently one of the most serious constraints on agricultural investment in South Sudan. Close collaboration with related institutions, such as the South Sudan Land Commission, is necessary.

#### *3.1.2.8 Economic relations with neighbouring countries*

Trade statistics for South Sudan are not available, but according to the Ministry of Finance and Economic Planning (MoFEP), the country's self-sufficiency rate in agricultural products is low and imports of these products accounted for around 12% of GDP in 2010.<sup>94</sup> Even before the civil war, the region was a net importer of food and other essential items while exporting various agricultural products to the north and its neighbours. During the civil war, both agricultural and industrial goods were supplied mainly from the northern region through northern Sudanese traders and partially across the southern borders.

A major change after CPA was a substantial increase in imports from the East African neighbours, particularly Uganda.<sup>95</sup> Total formal and informal imports from Uganda dramatically increased from USD41 million in 2005 to USD641 million in 2009. The increase was driven by the consumption and the construction booms during this period. After imports slowed in 2010 due to Southern Sudan's decreased foreign exchange earnings from oil exports, imports started increasing again during 2011, presumably affected by the closure of the northern border with Sudan after independence. Imports from Kenya also increased after CPA, but not to the extent observed in imports from Uganda.

Imports from Uganda are mainly food, vehicles and construction materials. South Sudan used to export a range of products such as hides and skin, honey, groundnuts, sesame, beans, gum acacia and forestry products, but after independence there are virtually no

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<sup>92</sup> Annex IV. Situation Analysis Report 2013/2015. Section 5.2.

<sup>93</sup> Annex III. Development Options Analysis 2014. Section 2.4.

<sup>94</sup> Annex IV. Situation Analysis Report 2013/2015. Section 2.2.2.

<sup>95</sup> Annex IV. Situation Analysis Report 2013/2015. Section 2.2.2 and Figure 2-6.

exports to Uganda. Imports from Kenya consist of a wider range of goods, including vegetable oils, beverages, cements, vehicles, machinery and equipment, pharmaceutical products, etc.

South Sudan has also been providing new business opportunities for the regional economy in the service sector, such as banking, hotels and restaurants, transport and communications, engineering and construction, and education.<sup>96</sup> For example, Kenyan-based banks, already leading regional integration in the banking sector, have established subsidiaries in South Sudan. Kenya Commercial Bank (KCB) and Equity Bank are the two largest commercial banks and started operating in South Sudan before independence. The Commercial Bank of Ethiopia has also been operating since 2009 in Juba. The planned, but as yet unfunded, construction of a railway line to join the East African railway system, and construction of a pipeline to Lamu for oil exports from South Sudan would boost the regional economy and benefit the country.

### **3.1.3 Private sector players and markets**

#### **3.1.3.1 Risks, vulnerability, and coping capacities of rural households**

The four most frequently perceived shocks by rural households are drought or floods, death or theft of livestock and crop diseases or pests followed by illness or death of household members.<sup>97</sup> The three most common shocks are all related to agricultural production indicating stable agricultural production is highly valued by rural households.

Coping measures reduced the impact of shocks caused by drought or floods and livestock died or stolen less than for those caused by crop diseases or pests.<sup>98</sup> This indicates that the negative impact of crop diseases or pests is more manageable. Coping capacity by households varies significantly by livelihood zone. Households in the Pastoral, Nile-Sobat Rivers and Eastern Flood Plains zones are most vulnerable with a relatively low level of coping capacity, whereas those in the Greenbelt are least vulnerable.<sup>99</sup> Households in the Pastoral zone show no reduction of impact highlighting their limited coping capacity; however, comparatively few households suffered shocks due to drought and floods, indicating their production system (livestock rearing) is well adapted to such weather conditions.

The coping measures for the three main shocks are similar.<sup>100</sup> Two major coping measures are to increase income and reduce consumption. Increase in income is achieved by mobilising assets and human resources: selling animals, more on-farm and off-farm work, receiving help from others, and spending savings. Reduction in consumption is achieved by sending children to live with relatives and lowering food consumption. Significant differences in coping measures by livelihood zone are recognised. For example, the sale of animals is the major coping measure in the Western Flood Plains, Nile-Sobat Rivers and Ironstone Plateau zones, whereas receiving help from others is the major coping mechanism in the Pastoral and Hills and Mountains zones, perhaps reflecting their tighter community and kinship ties. Reduction in consumption by sending children to live with relatives and reduced food consumption is particularly common in the Pastoral and Hills and Mountains zones. In the Pastoral zone, although large animal herds are commonly kept by households, the sale of animals as a coping measure is not commonly practiced.

#### **Targeted and cost effective intervention options**

<sup>96</sup> Kenyan Export Promotion Corporation. 2012. *Market Survey Report for South Sudan* (Presentation slides). [http://epckkenya.org/images/stories/Reports/south\\_sudan\\_survey\\_presentation.pdf](http://epckkenya.org/images/stories/Reports/south_sudan_survey_presentation.pdf)

<sup>97</sup> Annex V. Livelihood Zone Data Book 2014. Section 52.1.

<sup>98</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-3.

<sup>99</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-5.

<sup>100</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-4.

Since rural households' primary concern is with the risks associated with agricultural production, enhancing their existing coping capacity and increasing coping options will be considered by promoting, for example, appropriate livelihood diversification including crop, livestock, forestry and fisheries production. Livelihood diversification can be done individually and/or collectively depending on social structures in rural communities, such as kinship ties. Development of a rural labour market for on-farm and off-farm employment and the accumulation of an asset base will be promoted. Reduction in consumption in the Pastoral and Hills and Mountain zones will be discouraged. Since zonal variance of coping capacity and options is large, public interventions should target the most vulnerable zones, such as the Pastoral and Nile-Sobat Rivers zones. However, in the Pastoral Zone livestock production is well adapted to the semiarid climate and fluctuating weather conditions. Public interventions, to promote the sale and exchange of livestock as a coping option, should be designed carefully so that pastoralists' resilience is not compromised.

### 3.1.3.2 *Rural labour market*

The rural labour market can contribute significantly to the local and national economy by mobilising excess labour to achieve efficient utilisation of available human resources. If the rural labour market functioned efficiently, labour could be used across all livelihood zones throughout the year. Seasonal fluctuation in labour demand can be levelled by, for example, shifting excess labour from the Western Flood Plains zone to the labour scarce Greenbelt zone during the dry season, if the national rural labour market functioned properly. However, in South Sudan, the rural labour market does not function well due to high transaction costs and inflated wage rates which do not match agricultural productivity.

In rural areas 67% of population in the age group 20-59 had not worked during the last 12 months in 2009.<sup>101</sup> This suggests a very high rate of rural unemployment despite the fact that there seems to be sufficient agricultural land for production activities. In the case of work during the last 7 days, 47% worked distributed as follows: farming 17%, household employment 6%, services 5%, government 5%, animal husbandry 1%, fishing 1%, trade and transportation 1%, and forestry less than 1%.<sup>102</sup> A similar trend is observed in the case of work during the last 12 months.<sup>103</sup>

In terms of wage labour very little labour was paid in the agriculture sector. This indicates the lack of off-farm employment and poor working of the rural labour market. For example, among persons working in farming and animal husbandry over the last 7 days only 9% and 2% are paid.<sup>104</sup> Since persons working in animal husbandry are only 1% of the total persons of working age (20-59 years old), paid work in animal husbandry is insignificant.<sup>105</sup> On the other hand, 66% and 73% of persons working in forestry (charcoal production) and fishing are paid as these are generally commercial income earning activities. However, since persons engaged in both forestry and fishing activities are small (i.e. around 1%) the size of rural labour markets for these subsectors is very small.

Paid farming activities are found in all livelihood zones except the Pastoral Zone where almost no rural wage labour market exists.<sup>106</sup> In the Eastern Flood Plains and Greenbelt zones more than 20% of farming work is paid, indicating an existence of a relatively active labour market. The labour market for farming in the Hills and Mountains, Ironstone Plateau, and Western Flood Plains zones is poorly developed. Paid forestry workers were mainly

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<sup>101</sup> Annex V. Livelihood Zone Data Book 2014. Section 13.1(3).

<sup>102</sup> Annex V. Livelihood Zone Data Book 2014. Section 15.1(2).

<sup>103</sup> Annex V. Livelihood Zone Data Book 2014. Section 17.1(2).

<sup>104</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-6.

<sup>105</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-5.

<sup>106</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-6.

found in the Eastern Flood Plains, Greenbelt and Western Flood Plains. For paid fishing work, the Nile-Sobat Rivers, Eastern Flood Plains, Greenbelt, and Western Flood Plains are major zones of activity. Although incidence is very limited paid, animal husbandry is mainly practiced in the Pastoral, Nile-Sobat Rivers and Western Flood Plains.

The disparity of wage rates between men and women is significant. The average daily wage of all activities for men (9.3 SDG) is more than twice that of women (4.2 SDG).<sup>107</sup> Wage rates for farming employment are lower than these of other sectors. In rural areas, trade and transportation (28.9 SDG), government (21.0 SDG), and construction workers (17.1 SDG) are gaining high daily wages. Although numbers are limited, forestry (9.2 SDG), fishing (8.2 SDG), and services (7.2 SDG) gain moderate wages. The average wage rate for farming is relatively low (3.3 SDG) and is similar to that paid to household employees (2.9 SDG). Average wages for animal husbandry are extremely low, indicative of its non-paid work status. The Eastern Flood Plains and Greenbelt zones, with relatively active farming labour markets, exhibit very high wage rates compared to other zones.<sup>108</sup> However, there are large disparities in agriculture wage rates between the livelihood zones.

This somewhat unusual combination of observations of (1) positive correlation between high agricultural wages and high percentage of paid agriculture labour, (2) large wage rate disparities, and (3) high unemployment in all rural areas, suggests the distortion and failure of the rural labour market. The large wage rate discrepancies suggest the spatial segmentation of the rural labour market due to high market transaction costs. This segmentation prevents mobility of labour and equalisation of wage rates in different locations. The positive correlation suggests the existence of labour markets only in areas where a limited number of productive farmers can afford overvalued farm labour. This overvalued farm labour is suggested by the existence of large unemployment in rural areas, which is also a symptom of the Dutch Disease. This has resulted in the underutilisation of agricultural labour, and therefore, underutilisation of productive land for agricultural production.

### ***Targeted and cost effective intervention options***

The enhancement of efficient and fair rural labour markets should be an important goal of agricultural interventions and public service delivery. Interventions targeting commercial farming should enhance the employment of agricultural labour by commercial farmers. At the same time measures to protect the interests of agricultural workers whose only means of livelihood is their own labour should be introduced in a cost effective manner.

Segmented and distorted rural labour markets will be corrected by reducing market transaction costs and improving labour productivity to match inflated wage rates, or by promoting a competitive labour market to reduce wage rates. Reduction in transaction costs can be achieved by improving road networks, reducing multiple taxation and fee collection and delivering better public services. Interventions in livelihood zones with active agriculture labour markets will be given first priority in the early stages of CAMP implementation. Labour productivity can be improved through extension services targeted at progressive producers and the adoption of improved technologies, and human resources development.

Public service delivery must meet the different needs of the various livelihood zones. For example, the Pastoral Zone requires special attention due to the limited size of its rural labour market, and the Eastern Flood Plains and Greenbelt Zones require selected measures to address overvalued labour costs.

Implementation of appropriate macroeconomic policies in collaboration with the Ministry of Finance and Economic Planning is necessary. Such policies would include stabilisation of oil

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<sup>107</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-7.

<sup>108</sup> Annex V. Livelihood Zone Data Book 2014. Section 14(1).

based public expenditure, use of oil revenue for the improvement of agriculture sector productivity, value addition and infrastructure development.

### *3.1.3.3 Agricultural input markets*

The agricultural input markets in South Sudan are in their early stage of development due to the limited development of commercial farming. The largest expenditure for agricultural inputs during the last 12 month in 2009 in rural areas was labour costs.<sup>109</sup> Overall expenditures for agricultural inputs in all livelihood zones are low, indicating a large potential for an increase in demand from commercial farmers. There are some zonal variations: a higher incidence of farm repair in the Eastern Flood Plains (17%) and Nile-Sobat Rivers (15%); a higher incidence of machine/equipment repairs in the Hills and Mountains (8%) and Eastern Flood Plains (5%); and a higher incidence of pesticide use in the Pastoral (17%) and Hills and Mountains (6%).

#### ***Targeted and cost effective intervention options***

Agricultural interventions and public service delivery should result in efficient and fair rural agriculture input markets in all livelihood zones. They should enhance the use of agricultural inputs to increase productivity of agricultural labour by both subsistence and commercial farmers, initially in the Eastern Flood Plains and Nile-Sobat Rivers where relatively frequent use of agricultural inputs were observed. The Greenbelt should be another initial target due to its high agricultural potential. At the same time a fair market should be developed through the introduction of quality standards for agricultural inputs. In the longer term, import substitution should be encouraged by promoting and private sector investment in agricultural inputs.

### *3.1.3.4 Financial markets and private sector investment*

Financial needs for agricultural production and non-farm businesses in rural areas are insignificant due to the lack of commercial farming and agro-businesses.<sup>110</sup> Commercial banks see high risks in lending to agriculture because of farmers' lack of liquid assets and property to be used as collateral; the risky nature of their business due to unpredictable drought or floods, death or theft of livestock, crop diseases and pests etc.; the volatile prices of agricultural products; the farmers' low business skills; and few loan applications. At the same time, productively does not match the expected rates of return (interest rates).

In the rural areas households obtain extra funds largely through informal arrangements with family and/or other individuals. Most borrowing was for household consumption needs. Only a very small portion was for investment in agriculture production and non-farm businesses.<sup>111</sup> About 14% of households borrowed money informally from family and/or other individuals in 2009.<sup>112</sup> Only 0.1% and 0.2% of them borrowed from banks and government agencies, and NGOs or microfinance institutions. Informal borrowings are higher in the Eastern Flood Plains (19.3%), Greenbelt (16.2%) and Nile-Sobat Rivers (23.6%), suggesting a relatively active informal financial market.

#### ***Targeted and cost effective intervention options***

Financial needs will increase with the development of commercial farming and agro-businesses in rural areas. A favourable environment for agriculture production, marketing and processing and measures to decrease agricultural production risks and market transaction costs must be in place before enhancing the financial market. Investment needs

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<sup>109</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-9.

<sup>110</sup> Annex III. Development Options Analysis 2014. Section 3.5.2.

<sup>111</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-13.

<sup>112</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-12.



should be given priority as consumption needs have small mid-term and long-term impacts on agricultural development.

Although the absolute size of the current financial market in the rural areas is small, there are differences in demand and supply between the livelihood zones. An option to fill financial needs in the rural areas is enhancement of informal financial arrangements by forming cooperatives and community based groups. This could be promoted in a cost effective manner in the Eastern Flood Plains, Greenbelt and Nile-Sobat Rivers zones where a relatively active informal financial market exists.

### 3.1.3.5 *Production assets*

The main asset used for agricultural production in the rural areas is agricultural land. In fact land and labour are major inputs for agricultural production in South Sudan. Between 80% and 90% of rural households possess at least one agricultural plot.<sup>113</sup> Zonal variation is small. On average 85% of the households in rural areas are landed and 15% of them are not landed relying on off-farm employment and non-agricultural businesses.<sup>114</sup> Seventeen percent of households possess two or more plots. Differences between zones are small but larger average holding of plots are observed in Hills and Mountains (1.21 plots/household), Greenbelt (1.20 plots/household) and Western Flood Plains (1.19 plots/household).

The average number of plots per household is approx. 1.13, which implies that generally the labour needed to cultivate a plot is provided by the members of the household. Hence, the size of a plot and its productivity are almost exclusively determined by the labour supply available from a household. This means that, other than an increase in labour supply by population growth and mobilisation of the unemployed, the introduction of labour saving technology is needed to expand the area cultivated.

For an owner of land to invest in improved productivity of his land, secure land ownership and tenure over generations is important. In South Sudan, only 23% of households have a legal title (deed) to their plot of land whereas 52% have customary rights.<sup>115</sup> Both these types of tenure can be inherited but customary rights cannot be sold.

The development of commercial farming will involve the acquisition of plots through formal and/or informal arrangements in order to enlarge the area cultivated. This could be a challenge. Only 1% of plots were purchased.<sup>116</sup> Acquisition of land can also be done by clearing grassland, shrubs and forests if consent and approvals from traditional authorities and local communities are obtained. However, in this case ownership of the land is usually through customary rights (no legal title). There are significant differences in land clearance in the livelihood zones. In the Nile-Sobat Rivers zone 46% of plots were acquired by clearing. In the Eastern Flood Plains and Pastoral zones, 30% and 28% were acquired by clearing. The Greenbelt shows relatively stable land use patterns and only 3% of plots were acquired by clearing.

Since only 23% of households have legal title to their land, this could be a disincentive to investment in irrigation, which can require a large investment. This is consistent with the observation that lands in the urban areas are more irrigated than those in rural areas; more households have legal title in urban areas.<sup>117</sup> Comparatively larger numbers of irrigated plots are found in the Hills and Mountains, Ironstone Plateau and Eastern Flood Plains zones.

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<sup>113</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-15.

<sup>114</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-14.

<sup>115</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-19.

<sup>116</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-18.

<sup>117</sup> Annex V. Livelihood Zone Data Book 2014. Section 67.1, Table 2-17.

In 2009 4% to 11% of households possessed mobile phones except in the Pastoral and Ironstone Plateau zones where almost no households possessed mobile phones.<sup>118</sup> On average 19% of households possessed radios except in the Pastoral Zone. These communication tools can be used to enhance technology dissemination and marketing. Quality and quantity of labour supply may be influenced by access to health care facilities.<sup>119</sup> There are still many households not able to access a health care facility. The level of access varies by livelihood zone. In the Pastoral Zone 65% of households had no access, whereas in the Greenbelt Zone only 10% had no access.

### ***Targeted and cost effective intervention options***

Although large amounts of land are available for agricultural production, households cannot use large plots for commercial production because of: 1) limited household and wage labour due to the labour market failure, 2) limited application of labour saving technology such as fertiliser, pesticides and agricultural machinery, and 3) undeveloped land market. Interventions to address these shortcomings are necessary.

The government should support the development of the land market to enable enforceable land transactions and the conversion of non-agricultural land (grassland, shrub land and tree/forest land) to agricultural land. The land market is important for commercial farmers to obtain and/or lease land for production at fair prices and fees. Since the CAMP implementing ministries are not responsible for the establishment, management and enforcement of land ownership/tenure, close coordination with the responsible authorities is essential to support producers in securing agricultural lands. As the establishment of such a system is expensive and time consuming, alternative arrangements, such as community based land management, needs to be considered to secure usufructs (right to use) rights. Mechanisms of coordination and consultation with various stakeholders, including traditional authorities and rural communities, should be established to secure land rights and agree to conversion of land use. Proper land use plans must be established before conversion and development of agricultural land will be considered. This is a way to mobilise traditional arrangements which would minimise the cost of public service delivery.

Promotion of communications equipment and agricultural information programming can be implemented cost effectively in areas where possession of mobile phones and radios is common. This would enhance informed and competitive decision-making by market participants making transactions.

#### ***3.1.3.6 Agricultural production***

Most households in South Sudan practice both crop and livestock production but the methods of production vary by livelihood zone. For example, for 22% of households in the Pastoral zone animal husbandry is their principal source of livelihood;<sup>120</sup> and 97% produces sorghum in the first growing season. This suggests that, in this zone, many farmers practise both animal husbandry and crop farming. Livestock holdings and crop production are tightly integrated within each household production system. Generally, livestock rearing is less seasonal; outputs are used to increase household asset bases to cope with shocks. This is consistent with the fact that households tend to practice crop production and hold livestock in order to diversify their production and asset base.

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<sup>118</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-21.

<sup>119</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-22.

<sup>120</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-25.

A high occurrence of cattle, sheep, goats and poultry is observed in all livelihood zones, with a particularly high occurrence of goats and poultry.<sup>121</sup> In the Pastoral Zone a high percentage of households have cattle, donkey, sheep, goats and poultry as their asset base. In this zone livestock is usually not commercially bartered or traded. Due to the large numbers of livestock and an immature livestock market development, prices of major livestock (cattle, sheep, goats and poultry) are generally lower than those in other zones. Households in the Nile Sobat Rivers, Western Flood Plains and Eastern Flood Plains zones are the next most likely to have livestock.

Seasonality in crop production varies by zone.<sup>122</sup> For example, in the Greenbelt and Pastoral zones, non-cultivation of farm land is low and the difference between first and second crop seasons is small, in other words seasonality is low. The Nile-Sobat Rives and Western Flood Plains zones show high seasonality, whereas the other zones show moderate seasonality. In terms of the rural labour market, high seasonality would result in a large fluctuation for rural labour with excess labour during the second crop season (dry season).

The variety of crop types produced is limited. In the first crop season the most frequently produced crop is sorghum (44%), followed by maize (19%), groundnuts (13%) and cassava (3%). These four crops are also main crops for the second crop season. Although the production of leafy vegetables (2%) is small, they are produced in all zones in the two crop seasons, suggesting the year-around existence of small irrigated vegetable plots in all zones. Production of other crops including commercial crops such as coffee, tea and cotton, are insignificant. Diversification of crop production will be important to maximise productivity of land and excess labour, particularly during the second crop season. In addition, infrastructure (roads etc.) is needed to promote temporary out-migration of excess labour to areas where labour demand is high during the second crop season.

Sorghum is grown all zones with significant variation in production per household.<sup>123</sup> The largest per household production (kg) was observed in the Hills and Mountains and Pastoral zones. The Eastern Flood Plains, Nile-Sobat Rivers and Western Flood Plains zones showed high percentages sold. However, the overall the percentage sold is low; 89% of the sorghum produced could be assumed to be for home consumption; also households produce sorghum mainly for home consumption and excess production is marketed. Large-scale cassava production (6,847 kg/household) was practiced in the Hills and Mountains Zone and 72% of the production was sold. However, small-scale cassava production was practiced in the Greenbelt, Ironstone Plateau and Western Flood Plains zones but most of the produce was for home consumption. It appears that large-scale production of cassava is for commercial production, and small-scale production of cassava is for home consumption.

### ***Targeted and cost effective intervention options***

Many farmers practice both animal husbandry and crop farming to diversify their production base and increase their resilience; further enhancement of such diversification, at both household and community level, can be promoted through public service delivery. Commercialisation of such mixed farming will be designed and promoted based on locally available technologies, which should be easily adopted by farmers.

Excess labour due to high seasonality in the Nile-Sobat Rivers and Western Flood Plains zones can be absorbed by agricultural activities in, for example, the Greenbelt zone where agricultural production is less seasonal. Targeted interventions could match demand and supply, which eventually could trigger larger scale incentives for country wide seasonal

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<sup>121</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-28.

<sup>122</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-26.

<sup>123</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-27.

labour migration. An appropriate regulatory framework will be established to secure a fair and efficient labour market to protect interests of both employers and employees.

Major crops, such as sorghum, maize, groundnut and cassava, produced by farmers are both consumed by themselves and locally marketed. The functioning and scale of these vibrant local crop markets and their value chains can be enhanced through the delivery of targeted public services for the improvement of crop productivity and market facilities, and for the enforcement of quality standards.

Commercialisation of livestock production must be supported with careful assessment of their cultural, social and economic values. The relatively high labour productivity is secured by the traditional nature of its production systems. Livestock also function as households' asset bases which significantly contribute to the reduction of their vulnerability against various shocks. Any changes to these traditional systems to more commercial systems must be carefully considered.

### *3.1.3.7 Agricultural output markets and households consumption in rural areas*

Due to early stage of agro-business development and industrialisation in South Sudan, intermediate goods are not treated in this section. These are goods used by producers and manufacturers rather than consumers. In later reviews during CAMP implementation they will be considered.

Although imported agricultural commodities are dominant in many large marketplaces in South Sudan, domestic agricultural commodities have the potential to take a larger market share; they are also an important component of agricultural production due to the rapid expansion of the urban sector, with large consumer markets. In the longer term, exports should be developed. It will be important to identify which value chains have the most potential and in which market (local/domestic/regional) the commodities are bought and sold.<sup>124</sup> Examples of fresh beef, sorghum and rice are given.

Total fresh beef consumption is approx. 21,000 tons/year and the average per capita consumption is 3 kg/year.<sup>125</sup> In rural areas 26% was produced by households and 58% was purchased. The highest own production rate was in the Pastoral (82%) whereas the highest procurement rate is in the Greenbelt (96%) and Ironstone Plateau (95%) zones. The market must be local as there is no cold chain to transport fresh beef long distances.

The national consumption of sorghum is approx. 870,000 tons/year and the average per capita consumption is 105 kg/year.<sup>126</sup> In rural areas 29% was produced by households and 53% was purchased from local and national markets. The highest own production rate was in the Pastoral Zone (53%) whereas the highest procurement rate is in the Nile-Sobat Rivers Zone (78%). The market can be local or domestic as sorghum can be transported long distances.

The national consumption of rice is approx. 23,000 tons/year and the average per capita consumption is 3 kg/year.<sup>127</sup> In rural areas 7% was produced by households and 75% was purchased from local, national, and regional/global markets since much of the rice consumed in South Sudan is from Asia. The highest own production rate (14%) was in the Eastern Flood Plains Zone whereas the highest procurement rates (100%) are observed in the Nile-Sobat Rivers, Ironstone Plateau and Western Flood Plains zones.

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<sup>124</sup> Annex III. Development Options Analysis 2014. Table 3-1.

<sup>125</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-35.

<sup>126</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-30.

<sup>127</sup> Annex V. Livelihood Zone Data Book 2014. Table 2-36.

### ***Targeted and cost effective intervention options***

The agricultural products markets have potential to be the drivers of agricultural development. If government interventions are effective in easing macroeconomic distortions, reducing high market transaction costs, increasing value added, and removing other constraining factors, the markets will be powerful drivers to attain food security and agricultural growth. It is also necessary to rationalise taxation schemes, and increase the efficiency and transparency of import and export clearance.

Continuing efforts to improve functions of markets will benefit the agriculture sector, especially when domestic agricultural products become internationally competitive and are exported. Some forestry products, such as teak timber and gum acacia, and to some extent charcoal, are already competitive in the regional and global markets; improvement of their export market channels could be considered to add more value to the South Sudan economy.

### ***3.1.4 Roles of public sector players***

The primary role of the government should be to provide an enabling environment for agricultural development. In the long term, their role would be confined to policy formulation, the establishment of a regulatory framework to reduce transaction costs, and the provision of public goods (including infrastructure) and safety nets for the most vulnerable in society. The government would not be a major provider or funder of goods and services that the private sector is capable of providing itself. However, South Sudan's private sector is still weak, partially because of poor infrastructure and regulatory frameworks, so in the short to mid-term, it will be necessary for the public sector to play a larger role, particularly in service delivery.

Public sector human and financial resources, infrastructure and instruments for service delivery are very limited compared to the huge demand for public services.

#### ***3.1.4.1 Governance, accountability and decentralisation***

As recognised in the Constitution and the South Sudan Development Plan 2011-2013, the national government's supervision and technical and financial support are essential for strengthening the capacity of the state and local governments, as well as that of traditional authorities, for service delivery, which would translate into higher governance and accountability at all levels of government.<sup>128</sup> The public sector capacity for service delivery is severely constrained by limited human, physical and financial resources at all levels of government, though the situation is more serious at lower levels. The weak accountability can be attributed to: 1) unclear reporting procedures (without reporting guidelines and formats); 2) inconsistency in ministerial structures between the national and state governments; 3) limited managerial and technical capacity at all levels; and 4) poor transport and communication infrastructure. Given the weaker capacity at the payam and boma levels, in the medium term counties should be considered front-line agencies responsible for providing on-the-ground agricultural support services to rural populations and efforts would be concentrated on capacity development at this level. In the long term, enhancement of the administrative capacity of payams and bomas would be prioritised.

#### ***3.1.4.2 Public financial management***

A major challenge identified for public financial management (PFM) was inadequate funds for operating costs and capital investment associated with limited institutional and technical capacity.<sup>129</sup> These conditions severely affect public investment and service delivery,

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<sup>128</sup> Annex III. Development Options Analysis 2014. Section 4.1.

<sup>129</sup> Annex III. Development Options Analysis 2014. Section 4.2.

especially at lower levels of government. It is necessary to secure external funds through project support earmarked funding, pooled funding and/or budget support. However, weak government capacity and PFM systems have inhibited donors from providing direct support to the government. In order to improve government's accountability the ministries concerned at the national, state and local levels, would be required to follow properly prescribed procedures for budget execution, control and monitoring. This implies a substantial need to strengthen their PFM capacity.

State-level annual budget planning, execution, procurement and monitoring are still weak, requiring significant efforts for improvement. Widespread corruption (including collection of unofficial fees or charges) is an issue requiring urgent attention and remedies. Informal (illegal) taxation and bribes are commonly practised in the agriculture sector and they discourage private investment and business. The government also recognises the need to strengthen revenue administration systems to correct issues associated with multiple taxation which is currently a significant burden on business.

### *3.1.4.3 Regulatory services*

Regulatory services are required to monitor practices in areas where opportunities for deception or harm to innocent parties exist, e.g., setting standards and grades of products, minimum health and environmental requirements for inputs and outputs, regulation against illegal activities, supervision of monopolistic or oligopolistic market situations, control of diseases and pests, and environmental management.<sup>130</sup> The national government is primarily responsible for creating regulatory frameworks and supervising enforcement mechanisms, though many of these powers may eventually be transferred to the state and local governments. However, private sector organisations, including farmers associations and communities, should increasingly be encouraged to regulate their own activities, once regulatory frameworks are established and fully operational. The state governments do not adequately report the status of regulatory services to the national government, even though they are mandated to do so, or sometimes no such responsibility is stipulated in laws.

The national government should strengthen regulations vital for agricultural development by making all legislation enforceable and relevant to present needs. This will involve an immediate review and updating of outdated legislation since there is a danger that the states will begin to develop their own legislation and regulations, as has already happened in the fishery sector of Jonglei State. When the states are preparing laws and regulations, it is essential that they are consistent with those of the national government. The national government needs to prepare relevant training programmes to improve the quality of regulatory services, including monitoring and reporting, by strengthening technical staff and facilities of state and local governments.

### *3.1.4.4 Research, extension, education and training services*

In general, research, extension, education and training services provided by the public sector are inadequate and weak due to financial and human resource constraints.<sup>131</sup> Improvement of research, extension, education and training is indispensable for agricultural development, but investment in research, extension, education and training would require relatively long and continuous endeavour to realise an impact in terms of increase in labour productivity and returns to capital. There are knowledge bases within the international and regional agricultural research and training institutes. Effective and feasible collaboration with these institutes, with support from development partners, in the medium- and long-term perspective is necessary.

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<sup>130</sup> Annex III. Development Options Analysis 2014. Section 4.3.

<sup>131</sup> Annex III. Development Options Analysis 2014. Section 4.4.

### *3.1.4.5 Infrastructure and facility development*

Infrastructure forms the basis for development and significantly affects the overall capacity to move people, inputs and outputs, and to send and receive information in the agriculture sector.<sup>132</sup> Although it is outside the jurisdiction of the agriculture sector, transport and communication infrastructure need to be swiftly developed all over the country. Buildings office facilities, ICT equipment and vehicles need to be provided, upgraded and put into use, especially at the state and county government offices. Measures to cover maintenance and operating costs need to be incorporated into a project at the design stage; not only public funds but also cost recovery measures should be considered.

Effective and efficient use of transport, communication and information facilities would result in organisational efficiency gains. Infrastructure and facility development is needed in the short-term to address the urgent needs of the state and local governments. Capital expenditure for asset acquisition must be accompanied by measures to secure costs for maintenance and operation and to utilise such assets productively and sustainably. The provision of cost efficient and cost recovery based public services can be considered in the case that such service provision may increase the economic returns of beneficiaries. The quality of public services will be on a par with the cost needed to render such services.

Improvement of road networks would have a crosscutting impact. Close coordination between CAMP implementing ministries and ministries responsible for trunk road development could result in the development of more and better trunk roads. It is recommended that the CAMP implementing ministries are responsible for the construction of feeder roads, and that areas with high economic returns should be selected.

### *3.1.4.6 Participation in regional economic integration*

Regional organisations promoting economic cooperation and integration among African countries and with partners from outside the continent have been facilitating South Sudan in establishing physical and institutional grounds for international trade and investment.<sup>133</sup>

South Sudan's potential membership in the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA) is generally considered to be beneficial for the country's economic development because it will enable access to these free trade areas. Prior to independence, GOSS expressed its intention to seek membership of EAC, and in November 2011 GRSS applied to join the community. In November 2012, however, the summit of EAC Heads of State directed its Council of Ministers to "commence negotiations with South Sudan", deferring South Sudan's membership. The reason for the decision is not clearly stated in the summit's communiqué, but further institutional strengthening seems to be required to meet EAC's admission criteria. South Sudan has also been invited to the COMESA summits since 2011. On the other hand, there is concern in South Sudan that the country has not been sufficiently developed to compete with other member states of these free trade areas.

### *3.1.4.7 Aid coordination mechanisms and resource mobilisation*

Aid coordination is crucial for provision of public services.<sup>134</sup> Development partners' support, either directly or via NGOs, has complemented public service delivery; it has contributed to developing public sector capacity for service delivery in the agriculture sector, especially when and where government financial and human resources was limited. Improvement, in government leadership and capacity in aid coordination, requires government commitment to articulate a consolidated policy direction and then implement it, based on reality on the

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<sup>132</sup> Annex III. Development Options Analysis 2014. Section 4.5.

<sup>133</sup> Annex IV. Situation Analysis Report 2013/2015. Section 2.2.3.

<sup>134</sup> Annex III. Development Options Analysis 2014. Section 4.6.

ground. Under these conditions, development partners would be willing to support government-lead planning, resource mobilisation and implementation of public interventions incorporating capacity development in the agriculture sector.

#### *3.1.4.8 Collaboration with civil society organisations*

The private sector, communities and civil society, including NGOs and community-based organisations, could all play important roles in shaping demand, developing policies, and delivering services.<sup>135</sup> Civil society has been significantly contributing to food security and agricultural development in the country. They are expected to contribute further to the national agenda by: 1) working with national and local governments to identify and utilise locally available resources, including human, financial and natural resources; 2) maintaining an open and constructive dialogue with national, state, and local governments towards the establishment of an enabling local environment; 3) engaging with local governments in designing development strategies and using their financial resources and human capacities to assist with implementation; 4) developing community-based solutions for service delivery in partnership with local governments; and 5) setting up appropriate institutions for social auditing of local governments' performance and promoting transparency and inclusiveness. The government can encourage civil society initiatives and provide support for them so that people can have better access to necessary services.

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<sup>135</sup> Annex III. Development Options Analysis 2014. Section 4.7.



### 3.2 Funding availability, requirements and allocation

This section discusses the relationship between funding availability, funding requirements and funding allocation. Funding availability is modelled under three public policy scenarios so as to predict the funds that might be available from the government and development partners. Funding requirements are estimated by the CAMP investment plan in the form of project costs. Another modelling exercise allocates the predicted available funds to each subsector. This approach shows that the choice of public policy will determine whether CAMP is fully implemented, or only partially implemented with delays and the associated lost opportunities in the agriculture sector. During CAMP implementation these three funding elements will be monitored and evaluated to allow for adjustment of the CAMP investment plan.

It also predicts economic growth (in terms of GDP) and available funds (government and development partners) for agricultural development over the CAMP implementation period of 25 years, which starts in fiscal year 2015/16 and ends in 2039/40. It uses a simple model based on 1) educated assumptions about potential economic growth, which also determines the growth of government revenue, and hence expenditure; and 2) three scenarios for different government policy choices on government expenditure allocation.<sup>136</sup>

The three policy choices lead to three corresponding funding availability scenarios as follows:

- Business as usual scenario: Only 0.12% (estimated percentage allocated in fiscal years 2011/12 and 2012/13) of total national expenditure will be allocated to agriculture sector development each year of the CAMP implementation period. The government does not recognise the importance of the agriculture sector and expenditure allocation will not change during CAMP implementation.
- Economic dividend scenario: 5% of additional funds generated from economic growth is moved to the agriculture sector during the period of positive expenditure growth (i.e. from FY2027/28 to FY2039/40 of the CAMP period). The government recognises the importance of agriculture sector investment and significantly increases its allocation once economic growth, and hence government expenditures, becomes positive.
- Peace dividend scenario: In addition to the increments in the economic dividend scenario, security expenditures (excluding salaries and pensions) are moved incrementally to the agriculture sector over the CAMP implementation period. The government recognises the importance of agriculture sector investment and its urgency, and sets policy that, as political stability and peace is restored, immediately moves resources from the security to agriculture sector.

In all three scenarios, recurrent expenditures (salaries etc.) are not included in the funds available for CAMP implementation; only development expenditures are included (funds that allow the government and its employees to carry out activities to develop South Sudan).

This model and its predictions are used to 1) to show the importance of policy choices concerning government expenditure allocation, and 2) obtain realistic estimates of funds available for CAMP implementation for each scenario.

The predicted funds available in each scenario will be used to prioritise and sequence CAMP projects, so that 1) their total annual requirement for funds is within the limit predicted in the

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<sup>136</sup> Annex I. CAMP Investment Plan. Section 1.

relevant funding availability scenario, and 2) maximum outcomes and impacts are secured with the available funds during CAMP implementation. The scenarios will also facilitate discussions by the government and stakeholders on policy decisions.

During CAMP implementation, the performance of the agriculture sector and the impact (e.g. GDP growth) of public interventions will be assessed periodically. The model and its assumptions about economic growth and government policy choices will be re-evaluated. For example, investment in the agriculture sector may increase economic growth which would allow more government expenditure; the model would have to be updated with new assumptions/parameters. Project prioritisation and sequencing may be revised to ensure optimal CAMP implementation.

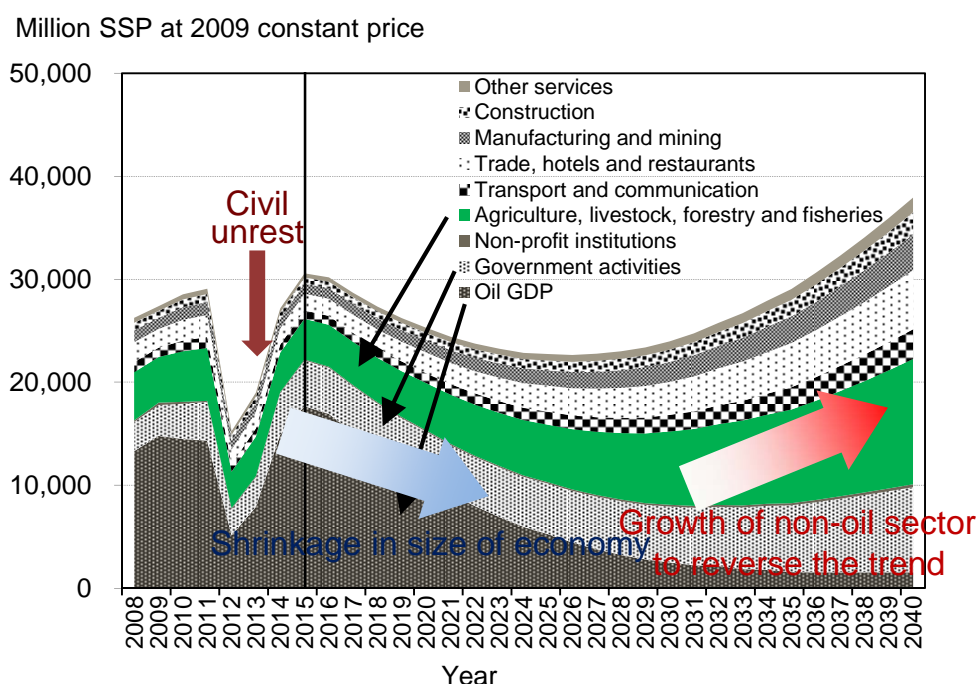
Findings from the model and its predictions are summarised here, but more detailed information is found in section 1 in Annex I (CAMP Investment Plan).

### 3.2.1 Economic growth

#### 3.2.1.1 Predicted GDP by sector

As shown in Figure 3-2, the oil sector is a dominant feature of GDP. At the time of independence in 2011 the oil sector contributed half of the national GDP. However, its contribution to the GDP is expected to reduce to less than a tenth of its initial value by the end of the CAMP implementation period, with an average annual growth rate of -8.7%.

**Figure 3-2: Predicted GDP by sector**



Source: NBS, IMF, AfDB, FAO and CAMP TT

Non-oil sector growth rates were set to compensate for the decline in the oil sector. In order to secure these predicted high and stable growth rates, investment of oil based revenues in quality public service delivery, infrastructure development and production of goods for domestic or export markets is essential. Oil based revenues must be used for the creation of productive assets and improvement of sector productivity rather than for consumption.

Also significant is the shrinking size of the national economy in phases I and phase II.<sup>137</sup> Negative GDP growth ends in 2026 (phase III) at SSP22,637 million which is 74% of the GDP in 2015. After 2026, the GDP is forecasted to grow due to the predicted high GDP growth of non-oil sectors. Positive GDP growth continues until the end of CAMP implementation (2039), when the predicted national GDP is SSP 35,936 million or 118% of the initial year GDP. By 2039, the oil sector GDP is only 9% of its initial value; the agriculture sector GDP reaches SSP 11,479 million or 290% of its initial value; the other non-oil sectors grow to 335% of their initial value; and the government sector shows moderate growth of 177%.

### *3.2.1.2 Predicted contribution to GDP by sector*

The oil sector's contribution to the GDP is predicted to decline to 4% in the final year of CAMP implementation, from 58% in the first year.<sup>138</sup> On the other hand, the GDP contribution of other sectors increases. The agriculture sector GDP contribution increases from 13% to 32%. The contributions of the other non-oil sectors triple in this time period. The contribution of the government grows moderately from 15% to 22%. By the end of CAMP implementation, the largest contribution to the GDP is by the agriculture sector (32%).

### *3.2.1.3 Predicted GDP per capita by sector*

Predicted GDP per capita declines from its highest value (USD 1,201) in 2015 to its lowest value (USD 696) in 2029. It then increases to USD 878 in 2039 which is 75% of its initial value. This will almost certainly lead to physical and food insecurity, which will need to be addressed by increased public investment in the non-oil sectors to accelerate the growth of the economy.

## **3.2.2 Funding availability scenarios**

### *3.2.2.1 Predicted government expenditures and development partner support*

Currently the government is largely able to finance recurrent expenditures (salaries etc.) but has limited funds to finance development expenditures, which allow its employees to carry out activities to develop South Sudan (hence the term development budget/expenditures). It is development expenditures that will allow the agriculture sector to develop.

Development expenditure for all sectors (except security) is predicted to decline consistently to become minimal in 2026/27 (phase III) and then grows rapidly.<sup>139</sup> A total of SSP 26,861 million is available for non-security development expenditure over the 25 years of CAMP implementation. During this period, SSP 96,769 million is available for security development expenditures. Development partner support to development expenditures is expected to be stable and increase gradually for a total of SSP 8,939 million during this period.

### *3.2.2.2 Predicted funds available to agriculture sector under all three scenarios*

The funds available to the agriculture sector under all three scenarios are summarised in Figure 3-3.<sup>140</sup>

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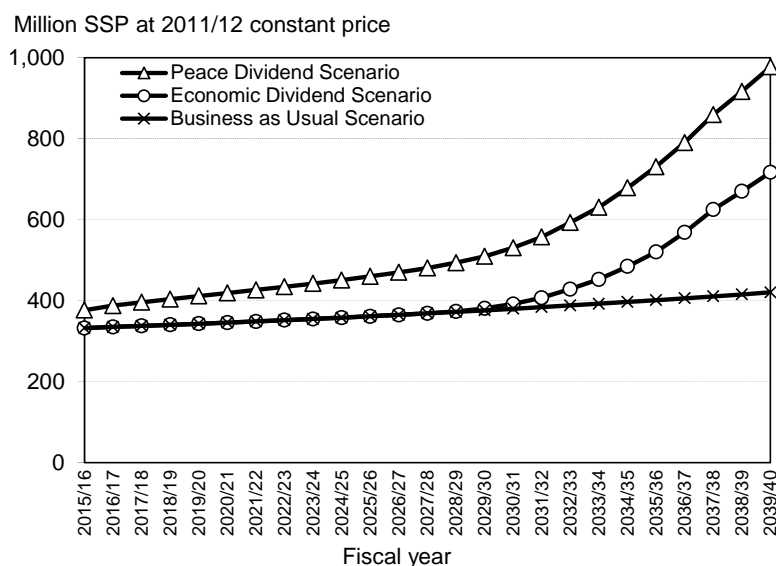
<sup>137</sup> Annex I. CAMP Investment Plan. Table 1-2.

<sup>138</sup> Annex I. CAMP Investment Plan. Table 1-3.

<sup>139</sup> Annex I. CAMP Investment Plan. Table 1-5.

<sup>140</sup> Annex I. CAMP Investment Plan. Table 1-6.

**Figure 3-3: Predicted funds available to agriculture sector under all three scenarios**



Source: CAMP TT

- Business as usual scenario: The total funds available over the 25 years of CAMP implementation are SSP 9,287 million (USD 2,322 million), 4% is financed by the government and 96% by development partners. This scenario shows a very slow growth in development expenditures.
- Economic dividend scenario: The total funds available over the 25 years of CAMP implementation are SSP 10,562 million (USD 2,641 million) and the government contribution is 15%. This scenario has slow growth in in the first half, but exhibits rapid growth in the second half.
- Peace dividend scenario: The total funds available over the 25 years of CAMP implementation are SSP 13,826 million (USD 3,456 million) and the government contribution is 35%. This scenario predicts an immediate increase in the expenditures which continues throughout the period.

The peace dividend scenario would allow a continuous and immediate accumulation of agriculture production assets and capital, and an increase in labour productivity.

### 3.2.2.3 Predicted total funds allocated to subsectors under all three scenarios

The ratio of total funds allocated to each subsector is similar in all three scenarios.<sup>141</sup> For example, in the peace dividend scenario, total funds of SSP 13,826 million (USD 3,456 million) are allocated as follows: for MAFCRD 1) institutional development 10%, 2) crop 42%, 3) forestry 10%, and for MLFI 1) institutional development 6%, 2) livestock 23%, fisheries 8%. Initially, due to the expected large share of GDP of the crop and livestock subsectors, a larger proportion of funds was allocated to these 2 subsectors.

### 3.2.2.4 Predicted funds allocated to subsectors under peace dividend scenario

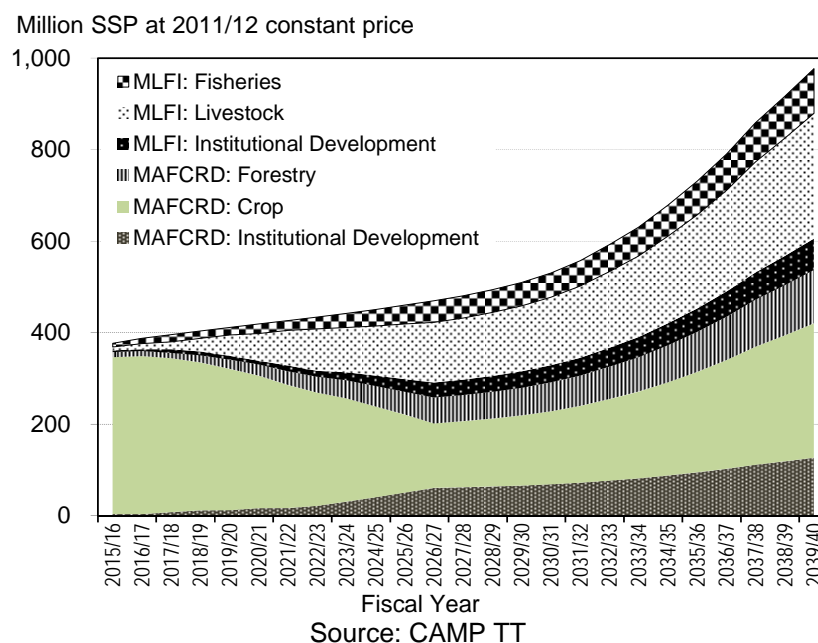
Figure 3-4 shows the predicted funds allocated to the agriculture subsectors under the peace dividend scenario.<sup>142</sup> Initially 91% of available funds was allocated to the crop subsector, based on the 2011/12 and 2012/13 government budget and development partner

<sup>141</sup> Annex I. CAMP Investment Plan. Table 1-8.

<sup>142</sup> Annex I. CAMP Investment Plan. Table 1-9.

commitments.<sup>143</sup> After that there is a decrease in allocated funds until FY 2026/27. Over this period of time more funds are moved to other subsectors, in particular to institutional development projects, and to MLFI to finance livestock projects so as to increase its share of the GDP. The funding of projects in each subsector will be constrained by the annual funding allocations.

**Figure 3-4: Predicted funds allocated to subsectors under peace dividend scenario**



### 3.2.3 Agriculture sector public investment under the peace dividend scenario

#### 3.2.3.1 CAMP investment plan funding requirements

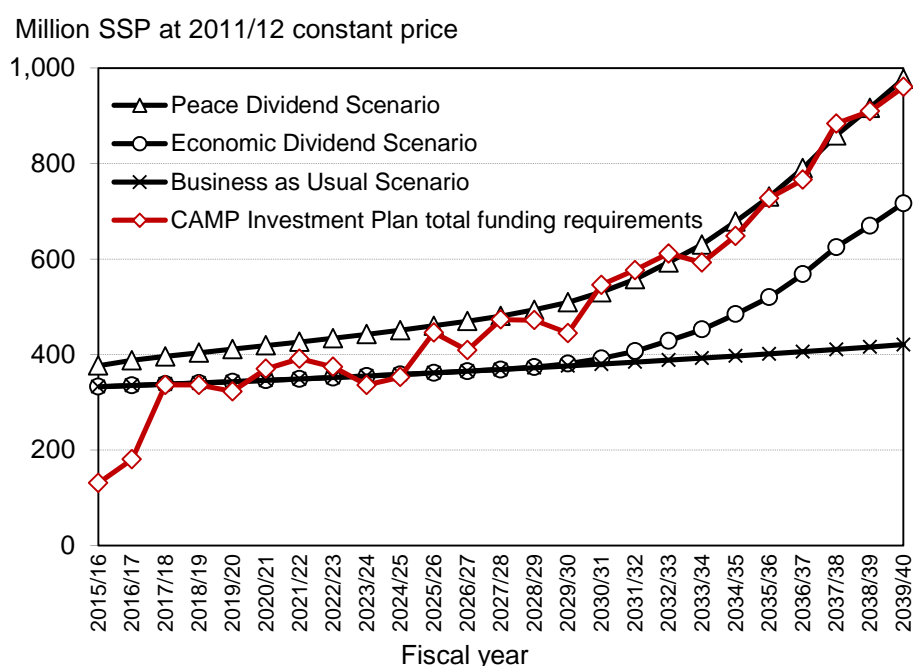
Projects are proposed in the CAMP investment plan as project profiles, where the funding requirements to implement them are also estimated. These funding requirements include a "project cost" to implement a project and a "scaling-up cost", which includes costs necessary to carry out routine activities and to scale-up and intensify activities, for example successful pilot schemes will be implemented in other locations. The "project cost" is presented in part 3 of each project profile in Annex I (CAMP Investment Plan), and the "scaling-up cost" is presented in the "Summary of annual project cost and scaling-up cost" section of each subsector. The "scaling-up cost" is estimated to be approximately twice the "project cost." These costs are the funding requirements for the CAMP investment plan.

The funding requirements could be met by funds made available under the peace dividend scenario. The selection of the other two policy scenarios does not yield sufficient funds for implementation (Figure 3-5). Therefore, the government's ability and determination to secure funds for CAMP implementation by diverting funds from the security budget to agriculture sector development will be crucial for the success of agriculture development in South Sudan. In the CAMP investment plan<sup>144</sup> it is estimated that it will cost USD 3,149 million to implement the CAMP projects, which is 91% of the total available funds (USD 3,456 million) under the peace dividend policy scenario.

<sup>143</sup> Annex I. CAMP Investment Plan. Table 1-7.

<sup>144</sup> Annex I. CAMP Investment Plan. Table 1-10.

**Figure 3-5: CAMP investment plan funding requirements under three policy scenarios**



Source: CAMP TT

### 3.2.3.2 Subsector funding allocation versus requirements

The estimated funds available under the peace dividend scenario are sufficient to meet the total funding requirements necessary for implementation of the CAMP investment plan. However, subsector fund allocations and total fund requirements will require adjustments during the course of CAMP implementation, based on the results of proper and periodical monitoring and evaluation exercises.

A comparison between the funds allocated to each subsector and their funding requirements are presented in Table 3-2, Figure 3-6, Figure 3-7, Figure 3-8, Figure 3-9 and Figure 3-10. The total funding requirements (project plus scaling-up costs) estimated for the crop and livestock subsectors are less than the funds allocated to these subsectors in Table 3-2. The total estimated funding requirements of projects in the crop subsector is only 51% of the funds allocated (Figure 3-6). This is particularly noticeable during Phase I and II of the CAMP period, when it is expected that the full allocation will be used to fund various emergency measures and ongoing projects that are not included in the CAMP investment plan. These activities will be identified and included in funding requirements during initial resource mobilisation. In the livestock subsector 84% of the allocation is required (Figure 3-7) leaving some room for further expansion and scaling-up of projects. It also may indicate that livestock subsector projects require fewer funds than other subsectors.

The estimated funding requirements of projects in the forestry, fisheries and institutional development subsectors exceed the allocated funds. The inclusion of a large forestry project (National forest resources inventory, information and management plans project), which will benefit all the natural and land resources management ministries and authorities, results in the total funding requirements being 134% of the allocated funds (Figure 3-8). For the fisheries subsector, during Phase I through Phase III, the total funding requirements match the allocated funds, but during Phase IV the total funding requirements exceed the allocated funds, resulting in 38% potential over expenditure (Figure 3-9). Large total costs are required during Phase I and II by the projects in the institutional development subsector (Figure 3-10).

This is due to the initial massive investment needed to develop the legal framework (including enforcement), and to develop institutional and human resources. In addition, high up-scaling costs of these projects are envisaged in Phases III and IV due to the continuing importance of the subsector; again funding requirements are expected to be higher than proposed funding allocations.

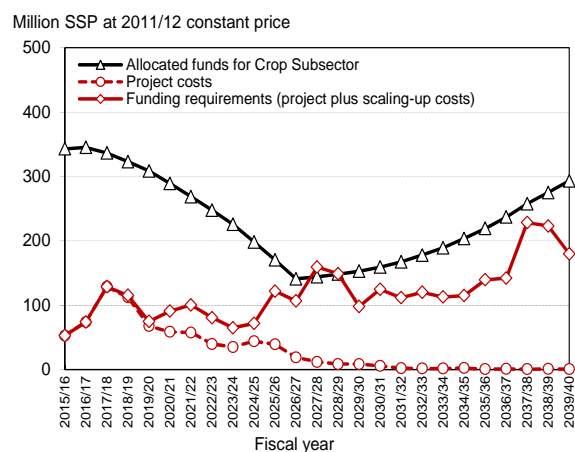
**Table 3-2: Summary of funding allocation versus requirements of CAMP investment plan**

(SSP/USD=4.00)

Ministries	Subsector	Allocated funds under Peace Dividend Scenario			Funding requirements of CAMP Investment Plan			Balance of funds (Allocated funds - funding requirements)		
		SSP Million a	USD Million b=a/4	% to total c	SSP Million d	USD Million e=d/4	% to total f	SSP Million g=a-d	USD Million h=b-e	Utilization rate i=d/a
MAFCRD and AB	Crop Subsector	5,821	1,455	42%	2,986	747	24%	2,835	709	51%
	Forestry Subsector	1,403	351	10%	1,877	469	15%	-474	-119	134%
MLFI	Livestock Subsector	3,241	810	23%	2,718	679	22%	523	131	84%
	Fisheries Subsector	1,166	292	8%	1,607	402	13%	-441	-110	138%
Both ministries	Institutional Development	2,195	549	16%	3,409	852	27%	-1,214	-304	155%
<b>Total</b>		<b>13,826</b>	<b>3,456</b>	<b>100%</b>	<b>12,597</b>	<b>3,149</b>	<b>100%</b>	<b>1,228</b>	<b>307</b>	<b>91%</b>

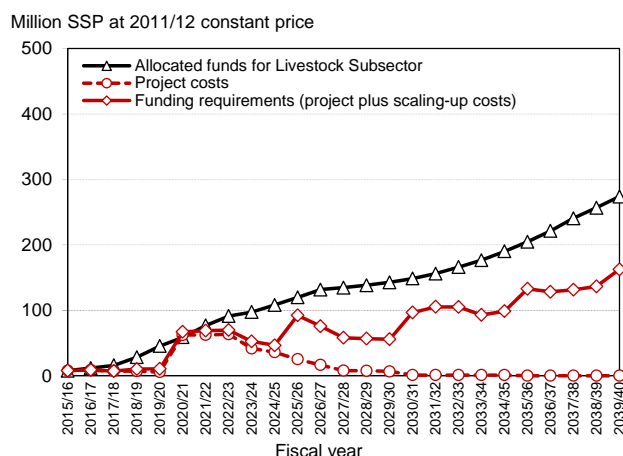
Source: CAMP TT

**Figure 3-6: Funding allocation versus requirements for crop subsector projects**



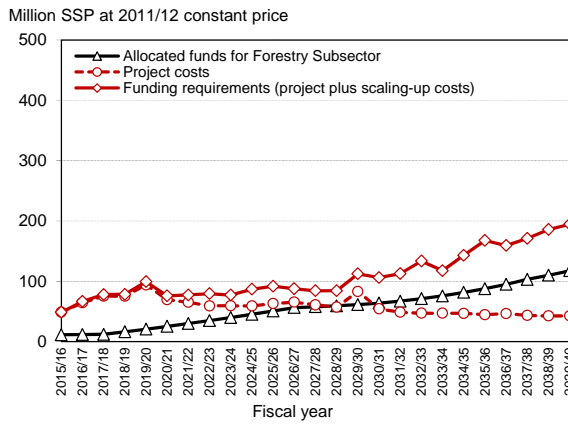
Source: CAMP TT

**Figure 3-7: Funding allocation versus requirements for livestock subsector projects**



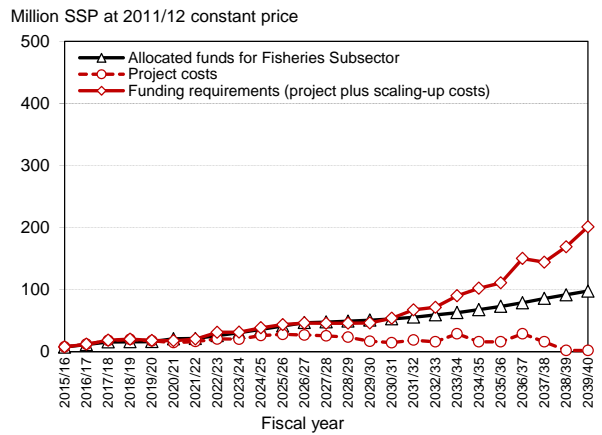
Source: CAMP TT

**Figure 3-8: Funding allocation versus requirements for forestry subsector projects**



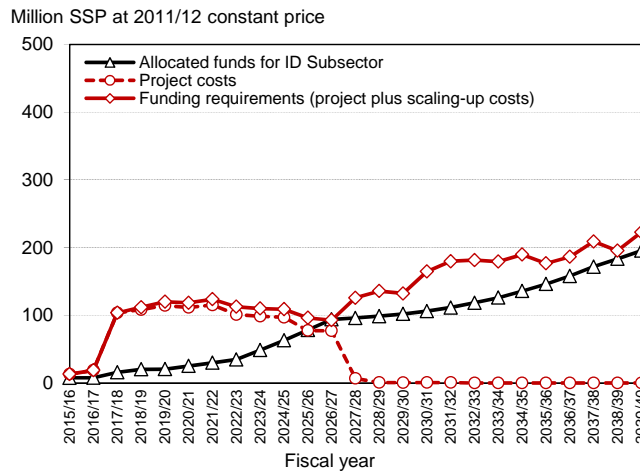
Source: CAMP TT

**Figure 3-9: Funding allocation versus requirements for fisheries subsector projects**



Source: CAMP TT

**Figure 3-10: Funding allocation versus requirements for ID subsector projects**



Note: ID: Institutional Development  
Source: CAMP TT



## **4. CAMP Implementation**

Although the IDMP report is published separately, and the structure of the report is different from the CAMP report, both CAMP and IDMP are to be implemented within the framework of CAMP. CAMP and IDMP will share an implementation mechanism – the CAMP/IDMP implementation mechanism. This chapter describes the shared CAMP/IDMP implementation mechanism with particular reference to the CAMP/IDMP implementation coordination structure. The other chapters describe CAMP implementation. However, several of the concepts, tools etc. developed in these chapters will be of use and shared during IDMP implementation.

### **4.1 CAMP/IDMP implementation mechanism**

As shown in Chapter 1.2, the CAMP/IDMP implementation mechanism is a part of the CAMP framework. CAMP and IDMP will be implemented by the government in partnership with its development partners; government systems and their functions and procedures will be used and enhanced wherever necessary to ensure an efficient and effective implementation. The implementation mechanism to be used by the implementing ministries (MAFCRD, MLFI, MEDIWR, and their affiliated public institutions in the national, state and county governments) will allow adaptive management of CAMP and IDMP implementation with an emphasis on results and performance monitoring in the all aspects of operational, financial and human resource management. This chapter is a summary of Annex II (CAMP Implementation), where the CAMP/IDMP implementation mechanism is presented in detail.

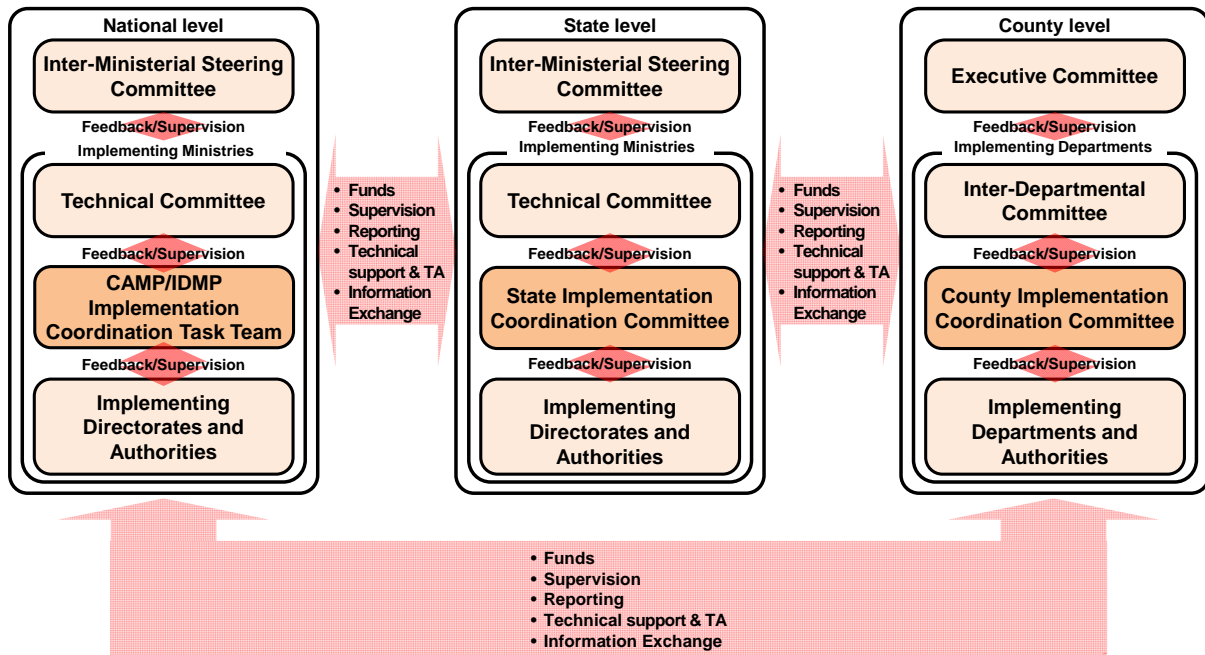
#### ***4.1.1 Elements of CAMP/IDMP implementation mechanism***

Core elements of the CAMP/IDMP implementation mechanism are the CAMP/IDMP implementation coordination structure (CAMP/IDMP ICS), and the government's public financial management system (PFMS). The CAMP/IDMP ICS defines authorities and functions given to CAMP/IDMP related entities and the decision-making process, whereas the PFMS regulates the management of public finances, all necessary for both CAMP and IDMP implementation.

##### ***4.1.1.1 CAMP/IDMP implementation coordination structure***

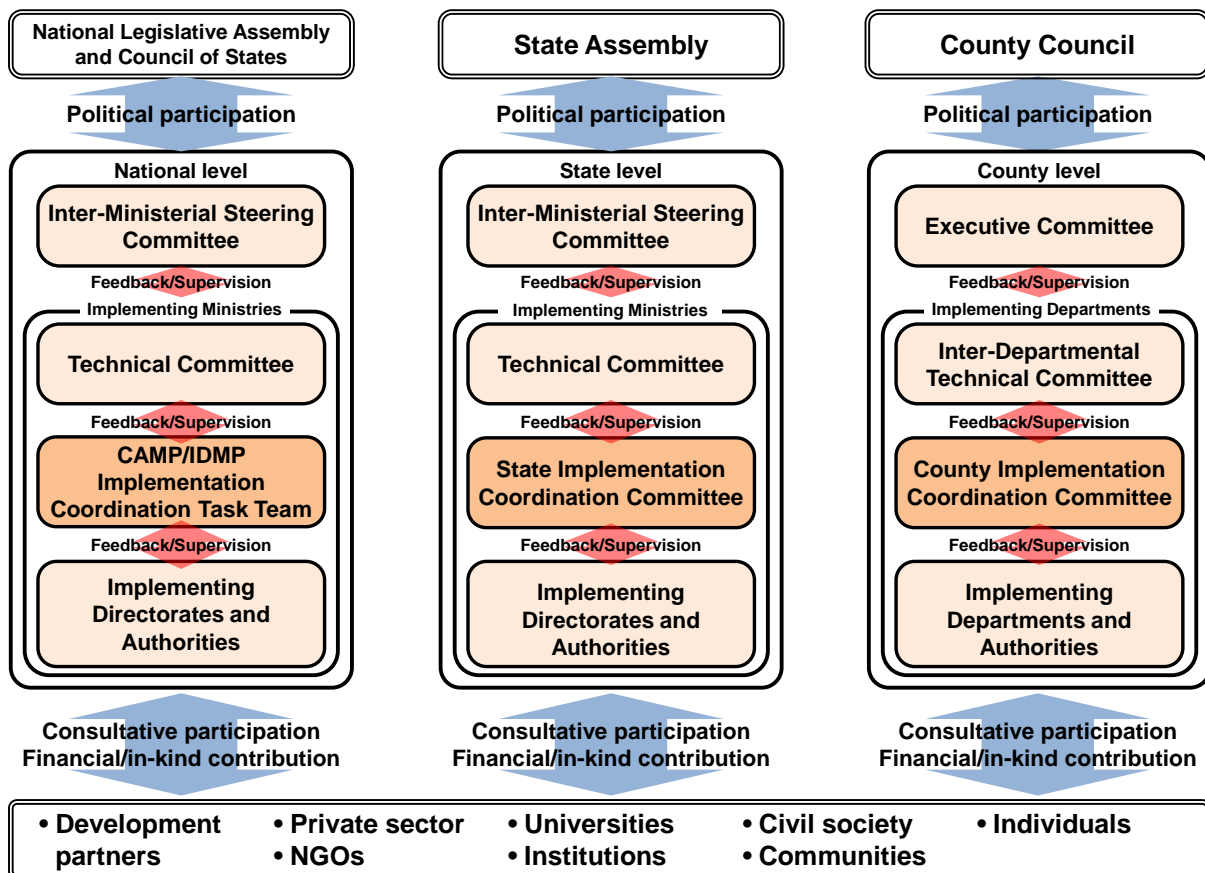
CAMP/IDMP ICS is a set of institutional arrangements involving national, state and county governments (Figure 4-1, Figure 4-2). This structure facilitates collective decision-making throughout CAMP and IDMP implementation by the government, development partners, private sector, NGOs, universities, civil society, communities and individuals, through political, consultative and financial/in-kind contribution participation. A national implementation coordination task team and state and county implementation coordination committees will be established. They are responsible for the overall coordination, management, and monitoring and evaluation of implementation at the national, county and state levels. They also lead and facilitate the mobilisation of internal and external resources for the implementation of CAMP and IDMP projects under various responsibility arrangements between national, state and county governments and the private sector.

**Figure 4-1: CAMP/IDMP implementation coordination structure**



Source: CAMP TT

**Figure 4-2: Three types of stakeholder participation**



Source: CAMP TT

### ***Inter-ministerial Steering Committee***

Inter-ministerial Steering Committees (IMSC) will be established at national and state levels of government. The IMSCs oversee and supervise CAMP/IDMP implementation, and are the highest national or state level decision-making bodies under the CAMP framework, which is compliant with the legal framework of South Sudan. Members of the IMSCs are representatives from CAMP and IDMP implementing and stakeholder ministries, such as those responsible for finance, infrastructure, commerce and environment. Their main functions are to provide political and policy support, to approve modifications to the CAMP and IDMP investment plans, and to secure close communication and coordination among the implementing and stakeholder ministries. The Executive Committee will be the equivalent at the county level.

### ***Technical Committee***

Technical Committees (TC) will be established at national, state and county levels of government under the IMSCs (or county Executive Committee). The TCs supervise and monitor the progress of CAMP/IDMP implementation and provide planning, technical and strategic guidance to the CAMP/IDMP Implementation Coordination Task Team (CAMP/IDMP ICTT), and implementing directorates and authorities under the CAMP framework. The TCs review the investment plans and propose improvements and/or modifications to the IMSC for approval. They also secure close communication among the implementing ministries, directorates and authorities. The members of the TC are the undersecretaries of the implementing and stakeholder ministries, and other members appointed by the IMSC.

### ***CAMP/IDMP Implementation Coordination Task Team and Committees***

A CAMP/IDMP Implementation Coordination Task Team (CAMP/IDMP ICTT) will be established at the national level of government under the TC. CAMP/IDMP Implementation Coordination Committees will be formed at state and county levels. The CAMP/IDMP ICTT promotes, coordinates and facilitates implementation by implementing directorates and authorities. They also facilitate intra-ministerial, inter-ministerial and external coordination and communication with other government authorities and participating parties, including development partners. The members of the CAMP/IDMP ICTT are government officials. The state and county implementation coordination committees have similar functions.

### ***Government implementing authorities***

Implementing directorates and authorities within the CAMP implementing ministries are the main public sector actors for CAMP implementation. A project authority (normally a Director General) will be responsible for implementation of a project. They will establish an appropriate organisational structure and allocate sufficient financial and human resources for all aspects of the project (design, planning, budgeting, implementation, financial management, reporting and monitoring and evaluation). The project authority is also responsible for information sharing and coordination with the implementing ministries, directorates and authorities. Similarly at the state level, the State Minister has overall responsibility for all projects implemented in the state, but actual responsibility is delegated to the Director General. At the county level the County Commissioner has the overall responsibility for all projects implemented in the county, but actual responsibility lies with the appropriate Assistant Commissioners.

### ***Stakeholder participation***

Stakeholder participation allows stakeholders to influence and share responsibility for policy formulation, priority setting, resource allocation and access to public goods and services. Promoting participation helps build ownership and enhance transparency and accountability, and in doing so enhances effectiveness of development projects and policies. Involvement of development partners (DPs) and NGOs is necessary for project implementation given the current weakness of both the public and private sectors. However, possible measures to

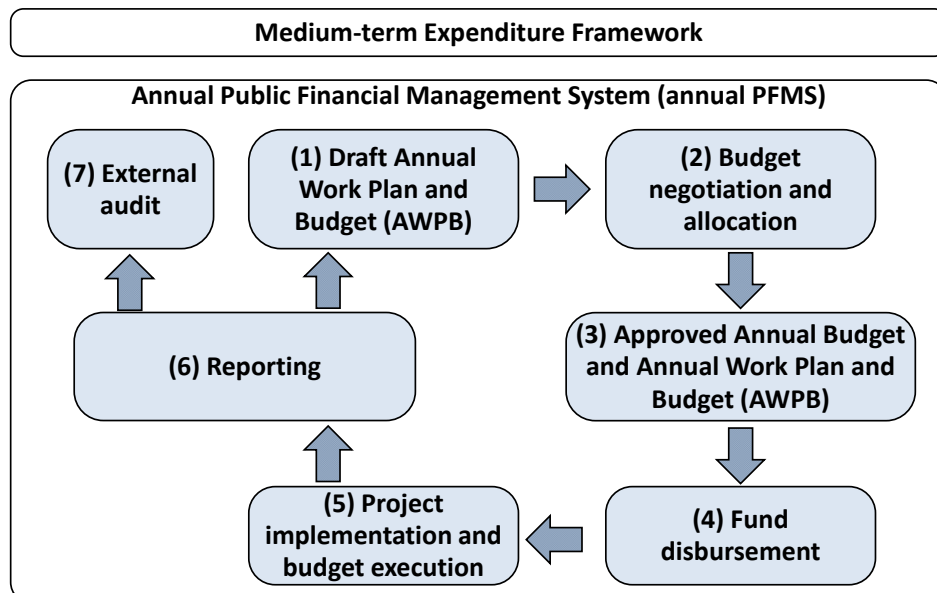
promote private sector investment and public-private partnership (PPP) will be identified to further accelerate investment in the agriculture sector. There are three types of participation: 1) political participation through the legislative process, 2) consultative participation through arrangements such as public hearings, stakeholder meetings and workshops, and 3) participation by monetary or in-kind contributions, for example, financial support from development partners and labour contribution by rural communities to infrastructure development. The CAMP/IDMP implementation mechanism promotes political participation to promote democratic and accountable governance; consultative participation to achieve a responsible and transparent implementation; and, participation by resource contribution to realise optimal mobilisation of public and private resources for agricultural development.

#### 4.1.1.2 Public financial management system

Public financial management (PFM) can be defined as controlling public financial resources for effective and efficient public service delivery. It involves planning and budgeting, accounting and reporting, internal controls, audit and external oversight etc., with the aim of: promoting availability of benefits to the greatest number of citizens; supporting good governance; and facilitating the achievement of three budgetary goals of fiscal discipline, effective allocation of resources to priorities and efficient service delivery

A public financial management system (PFMS) is the procedures (paper and computerised) necessary to perform PFM. All phases of the national, state and county budget processes have a PFM system component: planning, budget preparation, approval by parliament, budget execution, procurement, accounting, auditing and reporting. In 2012, MoFEP implemented the Integrated Financial Management Information System (IFMIS) as part of its PFMS, with support from the IMF and World Bank. IFMIS is a computerised system, able to handle budget preparation and processing, budget execution control, payment transfers, procurement control, revenue management, and asset management.

**Figure 4-3: Public financial management system (PFMS)**



Source: CAMP TT

The government public financial management system (Figure 4-3) will manage medium-term<sup>145</sup> and annual resource allocations of financial resources and in-kind contributions, and their execution during implementation. The government places a high priority on improving the use of the PFMS by both national and state governments. This will be fundamental for a successful CAMP and IDMP implementation. Since the PFMS employs the national annual budget (NAB), state annual budget (SAB) and county annual budget (CAB), and annual work plan and budget (AWPB) as major tools for operational and financial management, they will be used as management tools during implementation.

Under the situation of resource constraints in South Sudan, the adoption of a well-designed implementation mechanism, consistent with the existing PFMS, is important to ensure CAMP and IDMP are cost effective and has maximum impact. To mobilise financial resources of the government and development partners in a coordinated and planned manner, the CAMP/IDMP implementation mechanism should be aligned with the PFMS of the national and state governments.

#### **4.1.2 Implementation management areas and tools**

##### **4.1.2.1 Implementation management areas**

Successful implementation will need tools in the three principal management areas: 1) operational management, 2) financial management, and 3) human resource management, which requires well developed institutional capacity. A number of projects are devoted to develop such institutional capacity, which is currently weak.

Operational management includes the general management activities required for execution of a CAMP or IDMP project, as planned in the annual work plan and budget (AWPB). It includes implementation of planned activities, monitoring and evaluation (M&E) to allow for review and adjustment, and regular progress reporting. It also covers supervision and technical assistance. It is critical for effective and efficient project execution, that is, delivery of public services to create positive outcomes and impact.

Financial management includes financial and execution mechanisms, and accountability procedures. Proper financial management should be capable of ensuring that: 1) all financial transactions are recorded correctly; 2) funds are used only for their intended purposes; 3) funds are disbursed in a timely fashion; 4) accurate and timely financial reports are prepared; and 5) project assets and resources are safeguarded.

The CAMP/IDMP implementation mechanism will require good human resource management, including sufficient trained staff within the implementing ministries. To ensure this, the ministries will need to enhance their current human resource administrative systems and align them with the government's civil service reform program and its decentralization policy. Their staff will need appropriate office space, furniture and information and communications technology (ICT) equipment.

##### **4.1.2.2 Implementation management tools**

For operational, financial and human resource management, practical tools (Table 4-1) to handle day-to-day activities at all the levels of government are: 1) the CAMP and IDMP investment plans (CAMP and IDMP IPs), 2) national annual budget (NAB), state annual budget (SAB) and county annual budget (CAB), and 3) annual work plan and budget (AWPB). AWPB is both the foundation and a practical tool for sound project planning and implementation; currently it is only used in projects supported and implemented by

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<sup>145</sup> The Ministry of Finance and Economic Planning is responsible for designing and implementing the medium-term expenditure framework (MTEF). The framework is in the design stage and not yet implemented.

development partners. Proper and coordinated application of AWPBs by all implementing ministries, directorates and authorities will be promoted.

**Table 4-1: Implementation management tools**

Implementation management tool	Description of tool
CAMP and IDMP investment plans (CAMP and IDMP IPs)	Multi-year, short-term, medium-term and long-term CAMP/IDMP planning management tools
National annual budget (NAB), state annual budget (SAB) and county annual budget (CAB)	Annual planning and implementation management tools based on AWPB
Annual work plan and budget (AWPB)	Annual project planning and implementation management tool for detailed budgeting, and monitoring and evaluation for operational, financial and human resources management. AWPB include: 1) overall project plan; 2) annual work plan and budget; and 3) various sub-tools consistent with the PFMS of the government

Source: CAMP TT

### ***CAMP investment plan***

The CAMP investment plan (CAMP IP) is a set of proposed projects, which will incorporate on-going and pipeline projects. These projects are organised in a way that their justifications, priorities and sequencing are consistent with the expected path of agriculture sector development and assumed financial resources available for their implementation over the 25-year CAMP/IDMP period (fiscal year 2015/16 to 2039/40). The CAMP/IDMP period was chosen to realise the government's Vision 2040 and to be sufficiently long for the economy to achieve the expected agriculture sector transformation. The CAMP proposed projects in all agricultural subsectors are presented in project profiles and placed in the form of an investment planning space (IPS). Since CAMP employs a dynamic and adaptive management approach, project execution will be flexible; the performance of the investment plan implementation will be monitored and evaluated periodically. Based on such performance reviews, the CAMP investment plan will be adjusted to reflect the current situation regarding projects and resource allocation. Therefore, the CAMP investment plan is one of the core implementation management tools, which will be utilized for planning for CAMP on a multi-year basis.

**Table 4-2: National budget preparation timeline**

	Who	Activities	When
Preparation of preliminary National Budget Plan	MoFEP	<ul style="list-style-type: none"> <li>• Estimate of government funds available for next fiscal year (or resource envelope)</li> <li>• Broken down by estimated funds available to each ministry (or budget ceilings)</li> <li>• Potential donor commitments added</li> </ul>	November
Call for budget sector plans (BSPs)	MoFEP	<ul style="list-style-type: none"> <li>• Ministries told of their budget ceilings and potential donor commitments</li> </ul>	January
Preparation of BSPs	Ministries	<ul style="list-style-type: none"> <li>• Negotiation within ministry</li> <li>• Allocate budget to directorates</li> <li>• Submit to MoFEP</li> </ul>	Due by February
Review of BSPs	MoFEP/ ministries	<ul style="list-style-type: none"> <li>• Negotiations to increase budget ceilings</li> </ul>	March-April
Approval of National Budget Plan	Legislative Assembly	<ul style="list-style-type: none"> <li>• Review by Parliament</li> </ul>	June
Start of new fiscal year	MoFEP	<ul style="list-style-type: none"> <li>• Funds available for disbursement by ministries</li> </ul>	July

Source: CAMP TT

### **National, state and county annual budgets**

The process to prepare the national annual budget (NAB) is shown in Table 4-2. Preparation of the state and county annual budgets is a little later as the states and counties receive some of their budget from the national ministries. The fiscal year is from the beginning of July to the end of June the following year.

### **Annual work plan and budget**

During CAMP and IDMP implementation, all projects commenced by the government or the government and development partners should use the annual work plan and budget (AWPB). The AWPB will be developed by the implementing authority with assistance, as necessary, from the national CAMP/IDMP ICTT or state and county implementation coordination committees. The AWPB is a tool for annual project planning and implementation, also used for detailed budgeting, and monitoring and evaluation for operational, human resources and financial management. Currently it is only used in projects supported and implemented by development partners.

The AWPB provides detailed activity planning and sets out what will be accomplished during the year and consist of 1) overall project plan, 2) annual work plan and budget estimates, and 3) various sub-tools consistent with the PFMS and the CAMP framework (Table 4-3). The overall project plan is a narrative document based on the related project profile. The annual work plan and budget estimates are a combination of narrative and project costs/timelines necessary to deliver the planned outputs.

**Table 4-3: AWPB structure**

Section	Elements
1. Overall project plan	<ul style="list-style-type: none"><li>• Objectives, rationale, and project description</li><li>• Expected outcome</li><li>• Components and expected outputs</li><li>• Total budget including source of funds, cost items, and allocation plan</li><li>• Responsible parties, time frame and other necessary information for M&amp;E</li></ul>
2. Annual work plan and budget	<ul style="list-style-type: none"><li>• Outcome and output review of previous year</li><li>• Planned annual activities assembled under relevant components</li><li>• Estimated budget including source of funds, expenditure items, unit costs, quantities, costs by line items, procurement method, and other information necessary for M&amp;E for operational, financial and human resource management</li><li>• Timing and locations of activities and expenditure</li></ul>
3. Sub-tools	<ul style="list-style-type: none"><li>• Quarterly and monthly plan</li><li>• Monitoring and evaluation plan</li><li>• Risk assessment plan</li><li>• Procurement plan</li><li>• Gantt chart</li><li>• Formats of monthly, quarterly and annual reports</li></ul>

Source: CAMP TT

The planning process for the AWPB will use a results-based management framework which focuses on results in terms of outputs, outcomes and impacts (Table 4-4), although the

AWPB will focus only on outputs and outcomes.<sup>146</sup> M&E will establish linkages between inputs for public service delivery (financial and human resource) and outputs, outcomes and impacts delivered by these services (assuming no other factors are involved).

**Table 4-4: Outputs, outcomes and impact**

M&E subjects	Definition
Outputs	<ul style="list-style-type: none"> <li>Public services delivered or goods provided to beneficiaries including private sector entities and public sector organisations</li> </ul>
Outcomes	<ul style="list-style-type: none"> <li>For private sector entities including households: Outcome is a change in beneficiaries' individual or collective behaviour leading to a change in volume of labour and/or capital employed, and/or labour productivity and/or returns to capital</li> <li>For public sector entities involved in public service delivery: Outcome is a change in organisational behaviour and decision-making processes leading to changes in efficiency and effectiveness of public service delivery</li> </ul>
Impact	<ul style="list-style-type: none"> <li>Impact is value added (GDP growth) rendered by public service delivery (assuming no other factors involved)</li> </ul>

Source: CAMP TT

## 4.2 Funding mechanisms

The two principal players involved in CAMP implementation will be:

- CAMP implementing ministries: This includes the national government (MAFCRD, MLFI, MEDIWR), state and county governments, and other government organisations, who are responsible for CAMP implementation.
- Development partners: This includes international organisations, bilateral agencies, NGOs and other organisations that are partners/supporters/fund contributors during CAMP implementation.

In developing a funding mechanism for CAMP implementation (whether for individual projects or collectively), it will be important to consider both the financial management of funds and the operational management of the project (or implementation). These functions will be carried out by fund managers and implementing authorities.

An implementing authority is responsible for project design, planning, budgeting, execution, reporting, and monitoring and evaluation. It can be the government or a third party supporting the government with the aim of achieving government objectives in the agriculture sector. This third party could be an international organisation, a government development organisation, or an organisation (profit or not for profit) specialising in this activity.

A fund manager takes responsibility for financial management of project funds, which could come from the government budget or development partners. It receives these funds and makes payment for goods, works and services procured by CAMP implementing authorities; it is also responsible for ensuring that financial management is compliant with government and/or development partner requirements. The fund manager can be the government or a third party (fund custodian). A fund custodian could be an international organisation, a government development organisation, or an organisation (profit or not for profit) specialising in this activity.

Financial management procedures are determined by who manages the funds:

<sup>146</sup> Food and Agriculture Organization (FAO) definition of RBM, retrieved from <http://www.fao.org/about/57743/en/> on Dec. 3, 2012.



- **Government:** Government managed funds are managed by MoFEP through the government's PFMS. MoFEP is responsible for ensuring that management of funds received from development partners is compliant with their requirements. The national government budget and funds from development partners are received into the national treasury. MoFEP makes payment for goods, works and services procured by the CAMP implementing authorities.
- **Fund custodian:** These funds are managed by the fund custodian through its own financial management system. Funds are received from development partners and/or the government budget into the fund custodian's CAMP designated bank account. The fund custodian makes payment for goods, works and services procured by the CAMP implementing authorities.

A CAMP project could have funds managed by the government and by a fund custodian.

#### **4.2.1 Project funding arrangements**

It is important to understand the various project funding arrangements which are possible and which have been used in the past, with respect to source and management of funds, and implementing authority.

Possible sources for funding projects are: 1) Government of Republic of South Sudan (GRSS) budget, 2) development partner funds, and 3) private investment. However, currently the government budget is mainly used for recurrent expenditures (salaries etc.) with little available to finance development activities. Private investment will not be a major funding source in the early stages of CAMP implementation; it will take time to establish a favourable environment for private investors in South Sudan.

Development partner funding can be in-kind or financial contributions. From the point of view of the government, in-kind contributions are goods and services necessary for implementation of a project, procured directly by the development partners. Development partner funding for project operation is kept separately from mainstream government expenditures and PFMS. Although consultation with the government is required, ultimate authority to decide where the funds are to be spent is with the development partner.

Financial contributions by development partners can be earmarked or non-earmarked. Use of earmarked financial contributions is defined by the development partner; the government is given no or limited authority over usage. The use of non-earmarked financial contributions is not restricted; the government is given full authority to determine use of the funds. The financial contribution could be in the form of a loan (to be repaid) or a grant (no repayment).

Development partner funds can be given as: 1) standalone project support, 2) pooled funding, 3) budget support with earmarked funding and d) budget support with non-earmarked funding (Table 4-5).

Many CAMP projects will be funded jointly by development partners and government. Government contributions will be salaries of staff in the implementing ministries, office space etc.; the government will be both the fund manager and implementing authority. Government and development partner budget support funding has to go through the annual budget process described in Table 4-2. The AWPB will play an important role in integrating a project's possible multiple funding sources from government and development partners.

**Table 4-5: Project funding arrangements**

<b>Arrangement</b>	<b>Characteristics</b>	<b>Funding sources and financial arrangement options</b>	<b>Preferred use</b>
Standalone project support	<ul style="list-style-type: none"> <li>Project support is funding which is kept separate from mainstream Government expenditures and PFMS</li> <li>Any aid separately identifiable from expenditures in GRSS plans, budgets and reports is considered by GRSS as standalone project support</li> <li>Project support can use GRSS planning, budget preparation, procurement and financial management systems</li> </ul>	<ul style="list-style-type: none"> <li>DP funds: managed by PFMS of DPs or fund custodian</li> <li>DP contributions are in-kind contributions</li> <li>GRSS funds: managed by PFMS of GRSS</li> <li>DP fund allocations are to be captured by AWPB but PFMS responsibility is with source of funds</li> </ul>	<ul style="list-style-type: none"> <li>The preferred use of project support in support of service delivery is for large-scale and quick public infrastructure projects and humanitarian aid</li> <li>Project support is also an effective vehicle for the provision of time-bound technical assistance and capacity building, when the government leads in the process</li> <li>As they are strengthened, projects should use government procurement and financial management systems and processes</li> <li>Pooled project support is preferred to standalone projects</li> </ul>
Pooled funding	<ul style="list-style-type: none"> <li>Pooled funding is a form of project support but is jointly funded by multiple donors, providing a more coordinated implementation mechanism</li> </ul>	<ul style="list-style-type: none"> <li>Pooled fund provided by several DPs, often managed by a fund custodian PFMS e.g. World Bank</li> <li>Fund manager could be MoFEP</li> <li>GRSS funds: managed by PFMS of GRSS</li> <li>Fund allocations from the pooled fund and GRSS allocations are to be captured by AWPB but PFMS responsibility of each budget line is with the source of funds</li> <li>DP contributions in form of project loan to GRSS can be managed in this manner</li> </ul>	<ul style="list-style-type: none"> <li>The preferred use of earmarked budget support is for conditional transfers to states and local governments</li> <li>Specific and temporary safeguards may be put in place where there are significant weaknesses in GRSS systems, until such a time as those weaknesses are addressed</li> <li>The objectives of earmarked budget support should be linked to the achievement of sectoral outcomes and impacts</li> </ul>
Earmarked budget support	<ul style="list-style-type: none"> <li>Earmarked budget support is where DPs disburse their funds directly to the Government Treasury and uses government PFMS for planning and implementation</li> <li>Earmarked for specific uses</li> <li>Earmarked budget support expenditures will be separately identifiable</li> <li>Earmarked budget support may be jointly funded by multiple donors, or by a single donor</li> </ul>	<ul style="list-style-type: none"> <li>DPs contribute their funds to a government account of the government established in the Treasury</li> <li>Managed by the government PFMS with additional controls/reporting as required by the DPs</li> <li>Earmarked funds will be managed by AWPB</li> <li>Requires trustworthy and accountable government PFMS. Not an option in the near future in South Sudan</li> <li>DP contributions in a form of project loan to GRSS can be managed in this manner</li> </ul>	<ul style="list-style-type: none"> <li>The preferred use of earmarked budget support is for conditional transfers to states and local governments</li> <li>Specific and temporary safeguards may be put in place where there are significant weaknesses in GRSS systems, until such a time as those weaknesses are addressed</li> <li>The objectives of earmarked budget support should be linked to the achievement of sectoral outcomes and impacts</li> </ul>

**Table 4-5: Project funding arrangements (cont.)**

Arrangement	Characteristics	Funding sources and financial arrangement options	Preferred use
Non-earmarked budget support	<ul style="list-style-type: none"> <li>• Non-earmarked budget support is where DPs disburse their funds directly to the Treasury and use government PFMS for planning and implementation</li> <li>• Funds under non-earmarked budget support are allocated through the government budget</li> <li>• Expenditures funded by budget support will not be separately identifiable in the budget</li> </ul>	<ul style="list-style-type: none"> <li>• DPs contribute their funds to a government account established in the Treasury. Such contributions are not earmarked</li> <li>• Managed by the government PFMS with additional controls/reporting as required by the DPs</li> <li>• Non-earmarked funds will be managed by AWPB of the government</li> <li>• Requires government PFMS to be accountable and transparent. Not an option in the near future in South Sudan</li> </ul>	<ul style="list-style-type: none"> <li>• Budget support is the preferred mechanism for funding overall government service delivery at national and state level in support of government expenditure priorities</li> <li>• Provision should be linked to overall achievement of GRSS priorities set out in its development plan</li> <li>• Budget support also can support improvements in systems for PFM, public service management and decentralized service delivery</li> </ul>

Note: Management of funds includes establishment of project accounts, financial management, procurement, audit etc.

#### *4.2.1.1 Standalone project support*

Development partner funding is in-kind contributions, and by default is earmarked. Both the fund manager and implementing authority are a development partner and/or third party. Although the standalone project support funding arrangement is financially isolated, it should consider using the government PFMS for planning, budget preparation, procurement and financial management systems with special arrangements. Development partners are recommended to participate in the public financial management (PFM) cycle and provide the financial data required in planning and budgeting to avoid duplications and gaps.

#### *4.2.1.2 Pooled funding*

The pooled funding arrangement is a form of project support but is jointly funded by the government and multiple donors, providing a more coordinated implementation mechanism. The pooled funding project funding arrangement can accommodate earmarked and/or non-earmarked funding from development partners.

There are various options as to how this can be implemented. For any funds from the government budget, the government is both the fund manager (MoFEP) and the implementing authority (government line ministry). For development partner funds, the fund manager can be the government (MoFEP) or a third party; similarly, the implementing authority can be a government line ministry or a third party. Development partners have generally preferred to use third parties to fulfil these two roles due to government lack of capacity. This can be considered as the option best suited to limited government capacity. As government capacity improves, it should be gradually be able to take over both roles. The third parties have been international organisations, government development organisations, or private companies specialising in these activities.

There were several pooled funding arrangements, such as the Multi-Donor Trust Fund, South Sudan Recovery Fund, Capacity Building Trust Fund, Common Humanitarian Fund and Basic Services Fund. The Multi-Donor Trust Fund was established in 2005 and closed in 2012; it covered all sectors including the agriculture sector. Currently the only pooled fund arrangements in existence are the Health Pooled Fund, Rapid Results Health Project and Local Governance and Service Delivery Program. The Health Pooled Fund is a grant,

whereas the other two arrangements are loans jointly managed by the World Bank and the government. It will be useful to investigate these arrangements to learn from their experience.

The Health Pooled Fund is briefly described. For development partner funds both the implementing authority and the fund manager are a third party. However, there are several capacity building activities to improve government capacity to carry out these functions in other projects, in particular with respect to PFM of the government budget. Overall setting of priorities for development partner funds are set by a steering committee composed of development partners and the Ministry of Health, with the aim of achieving government objectives in health care. In this arrangement, the development partners release funds to the custodian, who then disburses funds to the implementing authorities. Any movement of funds can only happen according to procedures agreed to by the development partners, custodian and implementing authorities. The custodian is responsible for ensuring all financial management is compliant with development partner requirements.

#### *4.2.1.3 Budget support*

Development partner funds are disbursed directly to the Government Treasury. The government is both the fund manager and implementing authority. The government PFMS is used for financial management of the funds and for planning, budget preparation, and execution. Development partners can require additional reporting.

#### **4.2.2 Funding mechanism design**

CAMP funding mechanism design must take into account the need to: (a) align CAMP implementation to the government PFMS to the extent possible (b) respond to the weak capacity of the government to act as a fund manager or implementing authority leading to development partners reluctance to adopt budgetary support funding arrangements; and (c) avoid funding gaps/duplications and enhance aid co-ordination. A large portion of funds needed for CAMP implementation (Section 3.2) is expected to be provided by development partners, who will demand transparency and accountability.

In the early stages of CAMP implementation, a major project funding mechanism is expected to be standalone project support due to lack of government capacity to be either the fund manager or the implementing authority, particularly with regards to accountability. However, the PFMS is expected to improve its efficiency, transparency and accountability due to the firm commitment of the government to do so.

The establishment of an agriculture sector-wide (or CAMP) pooled fund mechanism could also be considered. In the short term, development partners may require the roles of fund manager and implementing authority to be performed by third parties (as in the Health Pooled Fund). However, the long term objective should be to build government capacity so that it can carry out both roles. The CAMP implementation period of 25 years should be long enough to achieve this. With increased government capacity, development partners may be more willing to consider budgetary support. The sector's non-pooled resources would be accommodated through clear identification in the budgeting mechanism to avoid duplications and gaps in CAMP financing. Annex II (CAMP Implementation, section 2.2.1) describes possible mechanisms where the government is fund manager and/or implementing authority, which could be acceptable to both development partners and the government.

As the CAMP investment plan needs funds over several years, a mechanism to manage timely flows of internal and external funds must be established in collaboration with MoFEP and development partners. With the difficult conditions prevailing in South Sudan, it is inevitable that delays in project implementation will happen. Therefore mechanisms will need to be put in place to ensure projects are not left unfinished due to lack of funds.

### 4.2.3 Enhancement of existing aid coordination mechanisms

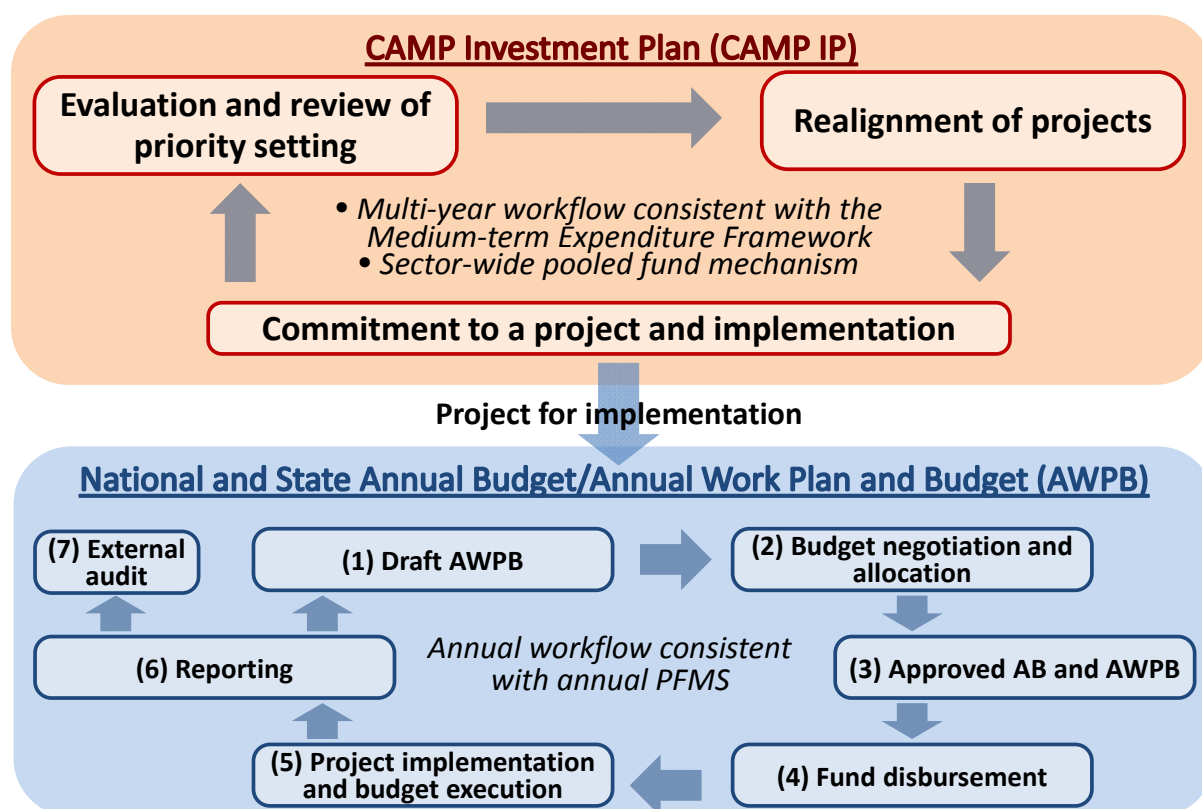
The CAMP framework envisages the enhancement of existing aid coordination mechanisms for the mobilisation of financial resources for CAMP implementation. The government leads aid coordination through a mechanism consisting of Sector Working Groups (SWGs), Quarterly Government-donor Forum (QGDF), Inter-Ministerial Appraisal Committee (IMAC) and High-level Partnership Forum (HPF). Currently the QGDF is only functioning intermittently.

The SWG arrangement enables the collective monitoring of all public financial management phases, including planning, budget preparation, execution, and monitoring and evaluation of outcomes and impacts; it aims to secure efficient and effective use of national and external resources provided by development partners. Aid coordination in the agriculture sector mainly takes place in the Natural Resources SWG (NRSWG) whose function will be further enhanced during CAMP implementation. The NRSWG does not include the MEDIWR, and this arrangement may hinder effective coordination between the ministries within the Sector and MEDIWR; this will be critical because of the importance of water resources for the Sector. Therefore, it will be necessary to consider a broader coordination arrangement inclusive of MEDIWR.

### 4.3 Workflow of CAMP implementation

The workflow of CAMP implementation consists of 1) multi-year workflow of the CAMP investment plan, and 2) annual workflow of NAB, SAB, CAB, and AWPB (Figure 4-4). The multi-year workflow is consistent with Medium-term Expenditure Framework (MTEF) of the government. The annual workflow is consistent with the PFMS. Coordinated application of AWPBs by all CAMP implementing authorities will be promoted, and significant attention given to the proper use of AWPBs; this will improve public service delivery.

Figure 4-4: Workflow of CAMP/IDMP implementation mechanism



Source: CAMP TT

### **4.3.1 Multi-year workflow of CAMP investment plan**

The CAMP IP is the main tool for the multi-year management of CAMP implementation. The three steps of management workflow are 1) commitment to a project and implementation based on policy and technical dialogues between the government (e.g. implementing ministries) and development partners, 2) impact assessment and review of priority setting by periodical evaluation of CAMP performance, and 3) realignment of projects in the CAMP IP by adding and/or eliminating projects, and/or changing sequencing, contents and/or sizes of projects.

The basis of the project's annual work plan and budget (AWPB) is the multi-year overall project plan, which lays out what the project will achieve in terms of outputs, outcomes and impact. It consists of project objectives, expected outcomes, outcome indicators, overall targets, components, key activities, expected outputs, output indicators, targets by year, budget by activity, budget allocation by year, including the total project cost and the sources of funds.

#### **4.3.1.1 Commitment to a project and implementation**

The government and/or development partners and other stakeholders agree to fund and implement a complete project or one formed by re-assembling projects and/or components specified in the CAMP IP. The ownership and implementation authority of the project will be determined with the long term policy aim of decentralisation and devolved public service delivery, which may not initially be possible. There will be the following steps: 1) policy and technical dialogue between the government and development partners for selection or formation of a project, 2) determination of project funding arrangements and sources and project management schemes, 3) collaborative design of project details, costing, and alignment of development partner procedures to the CAMP implementation mechanism and, 4) implementation. Multi-year commitment of project funding occurs during this stage, which connects the multi-year workflow of the CAMP IP and the annual workflow of NAB, SAB and AWPB. Selected projects are continuously monitored for implementation and funding status, as part of the CAMP IP portfolio of projects.

#### **4.3.1.2 Evaluation and review of priority setting**

The outcomes and impact of CAMP implementation will be monitored, assessed and evaluated periodically.<sup>147</sup> CAMP-wide procedures and methodologies will be determined in collaboration with the National Bureau of Statistics. A number of projects address improvement of institutional capacity regarding information generation, collection, analysis and dissemination. This will enable the CAMP implementing ministries and development partners to assess outcomes and impact, and review priorities. Outcomes and impact are delivered by private sector beneficiaries and public sector entities (Table 4-4). Indicators will include increase in income and labour productivity of agricultural households; increase in profits and return on capital of business entities; and increase in efficiency and effectiveness of public sector service.

#### **4.3.1.3 Realignment of projects**

Based on the performance reviews described above and changes in national and state policies and priorities, the investment plan will be adjusted. Adjustments could include additions and deletions of projects, changes in project sequencing, changes in contents of project profiles etc.

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<sup>147</sup> Annex II.CAMP Implementation. Section 3.1.2.

### 4.3.2 Annual workflow

The project teams at the implementing authorities should develop an overall project plan before developing the annual work plan and budget (AWPB). The overall project plan is the basis of the AWPB and incorporated into AWPB. The annual workflow is described in more detail in Annex II (CAMP Implementation, chapters 3, 4 and 5).

A project can be financed from multiple sources, by: the government from its own budget (officers' salary at the least), a pooled fund, an ear-marked or non-earmarked funding arrangement, and/or in-kind contributions from development partners. The AWPB is a government document for planning, management, evaluation and monitoring of project activities financed by these various sources.

**Table 4-6: CAMP annual workflow**

Action	When	Activities	Outputs/controls
Preparation of draft annual work plan and budget (AWPB)	2 <sup>nd</sup> quarter of fiscal year (October-December)	Initial plan of CAMP activities to be implemented in the next fiscal year based on priorities agreed in the Sector Working Group and with DPs. Also takes into account project activities initiated but not completed in the current fiscal year to ensure funding is set aside to complete activities.	Draft annual work plan and budget (AWPB)
Budget negotiation and allocation	3 <sup>rd</sup> quarter of fiscal year (January-March)	Determined annually by Ministry of Finance and Economic Planning (MoFEP) and approved by the National and state Legislative Assemblies	
Approval of NAB, SAB and AWPB	4th quarter of fiscal year (April-June)	Details of the AWPB (activities, objectives, performance indicators, outputs, inputs, cost estimate (budget) and implementing unit or agency) finalised. Budget confirmed.	Final annual work plan and budget (AWPB)
Fund disbursement	Starting in 1 <sup>st</sup> quarter of fiscal year and ongoing	Done by MoFEP to line ministries, states and counties as per planned disbursement schedule. Disbursement of government funds must be timely and predictable.	Bank reconciliation
Project implementation and budget execution	Throughout year	Procurement of goods, works and services and payments to internationally recognised standards. Activities performed.	Financial record keeping, sound internal control system, internal audit, monitoring visits, and interim external audit
Reporting	Throughout year	Reporting on progress of implementation, financial activities, procurement by ministries, development partners etc.	Monthly and quarterly financial reports, half year budget performance reports and annual reports, final financial statements for audit purposes
External audit	Within 6 months of fiscal year end	Carried out annually by Auditor General or contracted professional audit firm.	Auditor General reports to implementing agencies and the NLA.

Source: CAMP TT

Funds sourced from the government's own budget or from development partner budget support will be subject to the NAB and SAB process. Although funds from other sources will not be subject to this process, all CAMP projects should participate in the annual budget cycle through the AWPB.

Once the overall project plan has been developed, the project team formulates the annual work plan for the first year, and its corresponding budget. When the AWPB is finally approved the project team executes the planned activities during the year. Annual operations include monthly and quarterly monitoring, and an annual review, to identify outputs achieved, and outcomes if applicable. After the annual review, the project team formulates the next year's AWPB making use of the review findings to improve project implementation. Table 4-6 shows the CAMP annual workflow.

#### *4.3.2.1 Annual workflow of national and state budgets and AWPB*

Budget preparation as shown in Table 4-2 is a combination of top down and bottom up processes. The initial budget ceilings are given by the Ministry of Finance and Economic Planning to the line ministries (top down). If ministries wish to increase their ceiling they must justify it, usually by presenting previous years' expenditures or projected activities/expenses in the next fiscal year (bottom up). This is usually done at the end of the budget process, whereas it would be better done at the start. The government is promoting the use of the AWPB to rectify this and CAMP will encourage this.

The draft AWPBs will be developed based on expenditure estimates for the upcoming fiscal year; they will be used during budget negotiation and allocation in the 3<sup>rd</sup> quarter of the fiscal year. Government financial resources required to implement CAMP will probably be larger than the expected budget ceilings. The AWPBs will provide a sound basis to request a budget sufficient to carry out planned activities. Financial management will play a critical role in providing historical information on expenditure trends of implementing ministries. Ministries, that use funds prudently and for the intended purposes, are more likely to be supported with larger allocations.

All financial activity should be recorded in the PFMS, whether by development partners, NGOs or government so as to avoid duplication. Financial performance and outputs achieved from CAMP projects should be available to allow comprehensive sectoral monitoring and evaluation. The PFMS will be used to ensure government funds are used for the activities for which they were allocated. All interested parties will be provided with comprehensive financial reports.

The government is committed to public procurement reform and to put in place public procurement legislation that would include: public procurement policy, oversight, decentralization, institutional and organizational arrangements, mechanisms for dealing with complaints and appeals, capacity building and review processes. The procurement bill now before the National Legislative Assembly is consistent with international standards. The law once enacted with all support mechanisms, is expected to increase the confidence of both foreign investors and development partners as to the accountability and transparency of South Sudanese public procurement systems.

During CAMP implementation, procurement with government funds will be carried out at three levels: national, state and county. The majority of procurement will initially be carried out at the national level, because of limited procurement capacity at state and county levels. The Public Financial Management Manual for Local Governments provides detailed guidelines on how procurement should be conducted at local government level. The CAMP implementing ministries will need training at all levels of government on the use of the manual and transparent procurement.



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