

REGIONAL FORUM

ON SUSTAINABLE DEVELOPMENT FOR THE UNECE REGION

GENEVA | 1-2 March 2018



Case Studies

ECE/RFSD/2018/INF1



UNECE

Case studies – Introduction

The Regional Forum on Sustainable Development

The [Regional Forum on Sustainable Development \(1-2 March 2018, Geneva\)](#) creates a regional space for peer learning and sharing of practical solutions in implementing the Sustainable Development Goals (SDGs). Governments and other stakeholders mutually learn from sharing concrete experiences, best practices and challenges. Case studies will form the basis of the peer learning round tables.

The SDGs under in-depth review

The Regional Forum is closely aligned with the issues addressed at the 2018 High-level Political Forum (HLPF). The focus of the peer learning round tables will therefore be on the five SDGs under in-depth review at the 2018 HLPF:



Peer learning round tables

Governments and other stakeholders were asked to provide case studies from their national experience in implementing these five SDGs. The case studies are compiled in this document. A selection of case studies are presented during the peer learning session at the Regional Forum. Based on these case studies, country representatives and other stakeholders share concrete policy measures, propose solutions to identified problems and discuss how best practices can be adopted by peers. Round table discussions are interactive and steered by participants.

Outcome

The Regional Forum aims to feed both into national and global processes. The round tables are designed to foster mutual learning and help countries accelerate national progress in implementing the 2030 Agenda. The Chair's summary of the Regional Forum, which will also summarise the discussions at round tables, will provide the regional input for the High-level Political Forum (HLPF).

Contents

Case studies – Introduction	1
SDG 6: Clean water and sanitation	3
Round table: Making universal access to water and sanitation a reality in the UNECE region (1 March 2018, 15:00-16:30).....	3
Round table: Sharing water: balancing competing needs in a context of declining resource (1 March 2018, 16:30-16:30).....	3
Additional case studies.....	3
SDG 7: Affordable and clean energy	30
Round table: Improving the efficiency of the energy system (1 March 2018, 15:00-16:30).....	30
Round table: Transforming energy in support of the 2030 Agenda (1 March 2018, 16:30-18:00).....	30
SDG 11 : Sustainable cities and communities	47
Round table: Financing the transition to sustainable cities and communities: challenges and opportunities (1 March 2018, 15:00-16:30).....	47
Round table: Promoting resilient and sustainable cities and human settlements (1 March 2018, 16:30-18:00).....	47
SDG 12: Responsible consumption and production	83
Round table: Successful approaches to delivering on Sustainable Consumption and Production by 2030 (1 March 2018, 15:00-16:30).....	83
Round table: Towards a circular economy: innovation for sustainable value chains (1 March 2018, 16:30-18:00).....	83
SDG 15 – Life on land	100
Sustainable Management of Forests and Ecosystems (1 March 2018, 15:00-16:30).....	100
Biodiversity at the Heart of Sustainable Development – Toward Transformation and Resilience (1 March 2018, 16:30-18:00).....	100



SDG 6: Clean water and sanitation

Round table: Making universal access to water and sanitation a reality in the UNECE region (1 March 2018, 15:00-16:30)

- Introducing social tariffs following an equitable access self-assessment
Portugal
- Ensuring participation of public in water and sanitation related matters
Romania
- Assessing equitable access situation in Serbia at regional level
Serbia
- Findings of the survey on pupils' perceptions on WASH in schools in Lithuania, Republic of Moldova and Romania
European Environment and Health Youth Coalition
- Bridging environment and health to ensure access to water and sanitation
France

Round table: Sharing water: balancing competing needs in a context of declining resource (1 March 2018, 16:30-16:30)

- Balancing river flow regulation and water use for energy and for managing hydrological extremes
Finland
- Improving water quality and protecting ecosystems through multi-level action
Switzerland
- Water allocation in transboundary river basins: Hungary's experience
Hungary

Additional case studies

- Country Small-scale water supplies and sanitation under the Protocol on Water and Health
Germany
- Stakeholder dialogue on the national strategy for micropollutants
Germany
- New sewage sludge ordinance reforms sewage sludge utilisation and sustainable phosphorus utilization
Germany

Case Study // Round Table SDG 6: Making universal access to water and sanitation a reality in the UNECE region

Introducing social tariffs following an equitable access self-assessment in Portugal

Portugal

Level: national

Summary

After a self-evaluation exercise on assessing progress concerning equitable access to water and sanitation in Portugal, one of the aspects that has been identified as a priority for improvement concerns the existence of several tariff policies at the municipal level. This generates very heterogeneous tariff structures and values, with different impacts in terms of affordability by end-users. At national level, the water and sanitation services are, on average, affordable, although some specific local affordability issues may subsist for the lowest income households. To address this problem, several national policies for tariffs and social security mechanisms have been created, with their application subject to decisions taken at the municipalities level.

Situation

In Portugal, water services are mostly provided at the local level, and each municipality defines the applicable tariffs. Tariffs serve to ensure cost recovery of service provision and to guarantee its affordability by users with different incomes. The decentralisation of decision making regarding tariff structures and values means that there is a wide heterogeneity of tariffs nationwide. Historically, tariff structures in Portugal consist of a fixed part (service availability) and a variable part, which follows an increasing block tariff structure. Although heterogeneous, the average tariff level for a 10 m³ (standard consumption) is around 1,07 €/m³ for the water supply service and 0,79 €/m³ for the sanitation service. These tariffs are considered affordable since in proportion of the average income household these values represent 0,40% and 0,30%, for water supply and sanitation services, respectively.

Nevertheless, for the lowest income households, or those facing situations of unemployment, these consumer charges may represent a substantial challenge, which brings affordability issues. These concerns are common at the micro-level (lower income households) where social mechanisms should be implemented in order to minimize impacts on the ability of consumers to afford water services. Social tariffs can be a good instrument to overcome affordability issues of lower income households and currently more than half of the municipalities in Portugal have implemented this mechanism.

Strategy

The Water and Waste Service Regulator Authority (ERSAR) has collected information on tariffs since 2007. It then developed and applied an affordability indicator to check macro-affordability levels in

2010. Due to the different tariff structures, there was a need to create three different standard consumption levels (60 m³ /year, 120 m³ /year and 180 m³ /year) to compare charges from different municipalities. The affordability indicator created by ERSAR was designed to assess, at the municipal level, a measure of the ability of the average household (with an average consumption) to pay for water services. Thus, the indicator reflects the ratio between the consumer charges for a standard consumption of 120 m³ and the average household annual income in a given area where the service is provided. In order to assess average disposable income at the municipal level a purchase power index was used to differentiate income between municipalities. ERSAR also published the Recommendation no.1/2009 (tariff recommendation) to harmonise pricing schemes and to attain clear and affordable prices. Apart from establishing a recommended tariff structure, it also established social tariffs as a broad mechanism to ensure affordability for households with a lower income. Additionally, it provided guidelines to abolish connection costs to public networks when these are available nearby properties, whose costs are then reflected in the monthly tariffs of the service.

Results and impact

- Tariffs have gradually increased, following ERSAR's guidelines regarding a sustainable cost-recovery trend and reacting to the benchmarking annually promoted by ERSAR, which exposes both average consumer charges and cost recovery levels for each operator;
- Social tariffs defined in the recommendation established both the eligibility criteria, adaptable to each municipality and the amount of discount that consumers were entitled to receive, comparing with a regular consumer tariff. Overall, this mechanism could represent a final consumer charge 50% lower to those households, which is a substantial discount;
- A legal regime for the automatic attribution of a social tariff for the provision of water services to lower income consumers was established in 2017;
- The drafting of the proposal of the Tariff Regulation for Water Supply Services is currently ongoing. This process is linked with the review of other legislation conducted by the government in order to ensure that the new regulation is applicable to all management models and has a legal framework supporting it. This regulation is a cornerstone to ensure the effective sustainability of the sector and the protection of consumers.

Challenges and lessons learned

The fact that both water tariffs and social policy at the local level are municipal responsibilities often creates incentives for decision makers to artificially over subsidize water services, generating problems in cost recovery levels, which can prevent the sustainability of water operators. Additionally, in most low-income households, the affordability issue is not limited to water services. Since essential goods such as housing, food, education, health, among others, represent a substantial proportion of these households' income, even a small water tariff could leave that household struggling to afford to pay its water bill. For this reason, social mechanisms that tackle poverty in an integrated manner are critical. Finding the best method of funding social tariffs implementation is still a challenge. The most common method is through cross-subsidization from "regular" tariffs or through local budgets, by identifying specific poorer households who require this type of support (by local social services) or by allowing the application of other criteria (e.g., age, number of people in the household) to benefit from this mechanism. National social security system also has specific support to signalled households. A proper balance between social mechanisms and achieving sustainability is an important part of affordability. Unsustainable measures often create problems in the long term, so it is very important to

achieve an equilibrium between revenues and the costs of these measures to ensure services remain affordable.

Potential for replication

The practice of developing recommendations on tariff setting and social tariffs has a high potential for replication in other countries/locations of similar conditions and sets the ground for developing legislative measures on affordability while ensuring the availability and sustainable management of water and sanitation for all, as featured in the SDG 6.

Contact

Name: Ana Barreto Albuquerque

Organisation: The Water and Waste Services Regulation Authority (ERSAR)

Case Study // Round Table SDG 6: Making universal access to water and sanitation a reality in the UNECE region

Ensuring participation of public in water and sanitation related matters in Romania

Romania

Levels: national and local

Summary

Public participation is an important tool in the national, regional or local development activities, imparting quality in decision-making and strengthening the authority of decisions through public support in their implementation. Countries with democratic tradition use this instrument efficiently by always refining their legislative framework to expand public participation to the highest levels of decision-making or state policy formulation, aware of the benefits of public support.

Current environmental policies promote an integrated approach in which the public is a key actor in achieving the objectives of any sectoral policy.

This approach has been promoted in the overall sustainable development process initiated by the United Nations, following the Rio de Janeiro Summit in 1992, where the States Parties signed the Declaration on Environment and Development, recognizing that "one of the main elements indispensable to the achievement sustainable development is public participation in decision making" (Chapter 23 of Agenda 21). In 1998, on 28 July in Aarhus, the European Union and other 39 countries adopted the UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters. Romania ratified the Aarhus Convention in 2000. Romania is also Party to the UNECE-WHO Regional Office for Europe Protocol on Water and Health since 2000.

Situation

The Romanian Constitution stipulates that the state is obliged to take measures in order to assure hygiene and public health. The actions of the Romanian authorities are oriented to the extension of the centralized drinking water supply and sanitation systems, including those within the disadvantaged areas.

The provisions of the specific legislation on water and sanitation require access and participation of population in decision making process. For example, according to the provisions of the Drinking Water Quality Law, the authorities with attributes in the field of drinking water supply should ensure the adequate and updated information on quality of water intended for human consumption. Access to information and decision making process is also provided by the Water Law and is available for all the population groups, no matter of their specific situation, income level, etc.

A useful tool to ensure public participation in Romania is the *Guide to Public Participation, 2013*, developed by UNECE under the Protocol on Water and Health, under the leadership of Romania and NGO Women in Europe for a Common Future.

With regard to the implementation of 2030 Agenda for Sustainable Development, the Protocol on Water and Health is currently the main instrument in Romania to implement the SDG6 and the data collected under the Protocol was very useful in the process of preparation of the 2018 Romanian

Voluntary National Review. The work under the Protocol will therefore support the preparation of the 2018 High Level Political Forum for Sustainable Development.

Strategy

One of the entities with attributions in the field of drinking water supply and sanitation is the Water Company serving the capital of Romania, Bucharest, and it is an example of a successful public-private partnership (as also recognized by the [World Bank report](#)).

This water supply and sanitation company initiated a unique approach aimed at ensuring the involvement of public through consultation and participation. Openness and inclusiveness regarding the services provided, in terms of price setting, roles and responsibility of the water company, as well as investments planned and completed, are considered a priority. A concrete example of issues raised at consultations with public were two public debates held in 2016 regarding the initiation of a pilot project by the water company which would be challenging for the local government which will have to consider replacing the pipes for citizens, as in the case of building blocks and reinforcing buildings with seismic risk.

Most participants of the public debates highlighted openness for dialogue, ensured by this innovative approach, which allowed solving clients' problems. Participants also acknowledged the fact that such consultations have become a normal procedure when dealing with civil society. Approx. 1500 participants in 2016 and 1000 participants in 2017 were involved in public consultations.

The Bucharest water company is considered by the World Bank one of top 5 water companies applying best practices in specific activities to supply drinking water and sanitation as it follows a unique approach at country level which is to involve public through consultation and participation in Company activities. In addition, Bucharest owns one of the newest wastewater treatment plants in Europe, which, after the completion of the second phase, will become one of the most advanced wastewater treatment plants of our region.

Potential for replication

The good practice is that the public participation allows increasing visibility of water and sanitation issues through mediatizing the information from the public consultations. In addition, an important share of those invited to public consultations are administrators of condominiums, thus ensuring direct communication with the objective to inform all the local inhabitants about water supply and sanitation issues.

A good practice to replicate by public authorities competent in the field of drinking water supply and sanitation would be:

- inviting relevant stakeholders with which the company interacts (clients, employees, media, local and central public institutions (including ministries with competencies in the field), NGOs) to the public consultations held by the water and sanitation operators;
- organizing press conferences in the beginning of the public debates.

Contact

Name: Gheorghe Constantin, Director, Water Resources Managements Directorate
Carmen Neagu, counsellor (e-mail: carmen.neagu@map.gov.ro)
Organization: Ministry of Waters and Forests, Romania

Case Study // Round Table SDG 6: Making universal access to water and sanitation a reality in the UNECE region

Self-Assessment of the Situation of Equitable Access to Water and Sanitation in Serbia

The Republic of Serbia

Levels: national and local

Summary

Serbia has become a Party to the Protocol on Water and Health in April 2013. According to the Law on Ratification of the Protocol, ministries responsible for health, water management and environmental protection ensure its implementation. Since 2014 Serbia supported programme area on small-scale water supply and sanitation systems, co-leading together with Germany. Serbia took over the presidency of the Bureau of the Protocol at the 4th Meeting of the Parties held in November 2016 in Geneva, for the period 2017-2019. Already in 2015, Serbia fulfilled the main Protocol's obligations by setting national targets and target dates according to the article 6 of the Protocol. In its targets, Serbia clearly recognized decreasing rural and urban disparities as a priority area, in accordance with the findings of the baseline analysis carried out as part of the target setting exercise under the Protocol. **In 2017**, Serbia was encouraged by the support of UNECE to engage in the equitable access score-card self-assessment, in order to provide a comprehensive overview of the situation of equity access in central Serbia, using Equitable access score-card tool, developed by UNECE. The objectives of self-assessment of the situation of equitable access to water and sanitation were: to achieve a better understanding of the situation and challenges of equitable access to water and sanitation; to identify relevant stakeholders to contribute to the improvement of equitable access to water and sanitation and raise awareness on equitable access; to develop a comprehensive overview of the existing policy measures to address inequities in access to water and sanitation, and to identify information and policy gaps that need to be filled to ensure equitable access to water and sanitation.

The project, supported by UNECE, was implemented by the Regional Economic Development Agency for Sumadija and Pomoravlje (REDASP) with the support of the Ministry of Environmental Protection of and the Ministry of Health, on the territory of the Republic of Serbia - Sumadija and Pomoravlje, Regions with 12 municipalities.

Situation

The Republic of Serbia is a continental country located in southern Europe, in the central part of the Balkan Peninsula, occupying an area of 88,499 square kilometers. It is divided into five regions (Belgrade Region, Vojvodina Region, Sumadija and Serbia West Region, Serbia South and East Region and Kosovo-Metohija Region), which include the City of Belgrade as a special territorial unit and 30 administrative districts. According to the results of the 2011 census, reported the Statistical Office of the Republic of Serbia, 7,186,862 inhabitants live in Serbia (excluding Kosovo-Metohija). In Serbia 59,44 % of the population lives in urban areas and 40,56 % of the population lives in rural areas (the category "peri-urban area" is not relevant in Serbia). According to the National Employment Service in Serbia, there has been a decrease in the number of unemployed from 745,187 in 2011 to 724,096 in 2015. There was also a positive change in the level of GDP, which in 2011 amounted to 6,240,793 USD per capita and in

2015, 8,410,234 USD per capita. This is a significant increase that should allow to invest more in water supply and sanitation services.

Total accumulated water in Serbia in 2015 was 644.805.000 m³, and total delivered drinking water was 423.195.000 m³. The total dropped wastewater was 408.107.000 m³. The total dropped wastewater in systems for taking away wastewater was 295.543.000 m³ and treated wastewater was 45.126.000 m³. The Statistical Office of the Republic of Serbia collects data on the number of households connected to the water supply and sewerage network. In Serbia in 2015, 2,092,755 households were connected to the water supply, which represents about 85% of the total population; 1,481,513 households were connected to the sewerage network, relatively about 60% of the total population.

Strategy

The realization of the project lasted for six months.

Compliant with the decision of the Joint Working Group, responsible for the implementation of the Protocol Water and Health in Serbia, Regional Economic Development Agency for Sumadija and Pomoravlje (REDASP) was elected to implement the project.

Implementation team consisted of twelve members of the following structure:

- Managing („core-team”) with responsibilities of monitoring all the process during the project implementation; counseling (directed towards process improvement) and providing logistics (support in communication with the national stakeholders)
- Implementing (thematic experts, REDASP experts) with the task to create guidelines for collecting data and communicating with stakeholders; analyse the condition of the equitable access on the national level (legal, institutional, strategic). The thematic expert group consisted of four members, each responsible for one thematic section of the score card.

Analysis of the key stakeholders

Thematic and REDASP experts identified more than 80 significant participants of the process using the analysis of national and local stakeholders.

Organization of the first workshop had a purpose of introducing key stakeholders with the goals of the project and their roles in the realization of the process itself. Participation of international experts provided us with new experiences and recommendations for further development.

Guide for data collection, provided instructions for:

- Authorities (national and local level)
- Access to data (desk research, direct communication with responsible institutions)
- Recommendations for communication (written communication, scheduling meetings, organizing focus groups)

Organizing four thematic meetings of the focus group on a local level to provide the possibility of the discussion with the local stakeholders through representation and clarification of four sections and questions as well as completing the information.

The second workshop had a purpose of analysing the results.

Local level, namely 12 local self-government units, has been analysed and represented in summary via charts according to the questions in the each section of the score card.

Results and impact

During the project implementation, especially through direct work with local stakeholders in data collection and realization of four thematic workshops, a change of attitude arose among the key stakeholders in relation to recognizing the importance of the issue of equal access to safe drinking water and sanitation.

Discussions and conclusions brought through consensus of stakeholders of Sumadija and Pomoravlje territory, are directed to the following:

1. Access to water and sanitation is a human right, as recognized by the United Nations General Assembly and the Human Rights Council. The awareness of implication of legal obligation for the key stakeholders and decision makers to provide the equal access has significantly raised among the participants during the project implementation.
2. Geographical disparities bring rural residents into an unequal position compared to the population in urban areas. In the future, the authorities should take greater care of each individual in rural areas, because their right to water is equal to the rights of urban residents.
3. It is necessary to develop and apply specific technical solutions in rural areas.
4. Representatives of local self-governments and public utility companies in the municipalities where certain measures have already been established to provide better access for vulnerable and marginalized groups, have come to mutual conclusion, that it is recommendable to establish a formal integrated approach between the social welfare and communal activities institutions. This is not only for the favour of beneficiaries, but to their own favour and better efficiency in work.
5. During the implementation of the thematic focus groups, it was noted that there are examples of good practice in the territory of Sumadija and Pomoravlje in some local self-governments, which should be exchanged and applied to the rest of the territory.
6. The previous treatment of the problems of vulnerable and marginalized groups did not include the issue of equitable access to water and sanitation, and the practice needs to be changed. To begin with, issues should be identified as special priorities within sectoral strategies dealing with social issues of vulnerable and marginalized groups.
7. In the process of revision of the existing strategies of sustainable development the issues of equitable access to water and sanitation will be addressed. As the first step, based on the gaps and analysis results, these issues will be taken into account in the revision of national targets and setting the new one with target dates, according to the Protocol Water and Health, **already planned in Serbia for 2018**. Assessment the equity of access to water and sanitation services using UNECE score-card tool, will also lead to the definition of the result oriented Action Plan on equitable access in Serbia.

Challenges and lessons learned

The major challenge was the motivation of the local and national stakeholders to actively participate in the project. The campaign that took place through regular communication and meetings with stakeholders, representatives of local self-governments and relevant institutions, through additional e-mail and telephone communication, as well as meetings with focus group, resulted in the involvement of all relevant parties.

Potential for replication

The experience is easily replicable due to the UNECE developed score card tools, which is universally applicable to various contexts, i.e. Countries on both national and local levels. Besides, the adopted methodology provides guidelines for implementation on other territories and guidelines for broad participation of stakeholders.

Contact

Name:

Natasa Djurasinovic, MD

Chair of the Bureau of the Protocol on Water and Health

Head of International Cooperation and Implementation and Monitoring of Projects Unit

Organisation:

Ministry of Health of the Republic of Serbia

natasa.djurasinovic@zdravlje.gov.rs

Case Study // Round Table SDG 6: Making universal access to water and sanitation a reality in the UNECE region

Youth participation: voices from the schools of the pan-European region on access to water and sanitation

European Environment and Health Youth Coalition

Levels: national and local

Summary

The accessibility to safe water, sanitation and hygiene (WASH) is an important environmental determinant of health and every child's right. This is one of the key goals of the 2030 Agenda for Sustainable Development. Access to WASH for all children is also a priority set by countries under the 2010 Parma Declaration on Environment and Health and underpinned in the 2017 Ostrava Declaration. Yet, recent evidence shows that universal access to WASH in schools is not a reality across countries of the pan-European region. A cross-sectional study was conducted by the European Environment and Health Youth Coalition (EEHYC) in three countries of the Region as an example of collection of evidence and assessment of public opinion directly from the end-users in school. This is the first step in developing informed policies to improve WASH in schools and towards ensuring universal WASH and promoting children's health, well-being and education.

Situation

The countries considered in the survey face different challenges with respect to health and water and sanitation.

According to the WHO/UNICEF JMP analysis from 2017, the reported percentage of the population with access to safely managed drinking water is highest in Romania (99%), followed by Lithuania (92%) and the Republic of Moldova (70%). Access to safely managed sanitation is ensured for more than half of the population in Lithuania (61%) and Romania (57%), while in Republic of Moldova data on safely managed sanitation are not provided and 78% of the population is reported as having access to basic sanitation services. Data on hygiene are available only for the Republic of Moldova, where 87% have access to basic hygiene. (WHO/UNICEF JMP 2017)

Data from Romania and Lithuania on WASH in Schools were not retrieved, while in the Republic of Moldova two comprehensive surveys have been conducted by UNICEF and the National Public Health Centre. The results of these surveys showed a progressive improvement as well as health risks for pupils because of poor water quality, non-functional toilets and lacking adequate hygiene measures. (WHO Regional Office for Europe, 2016. *The situation of water, sanitation and hygiene in schools in the pan-European Region*)

Strategy

The EEHYC assessed pupils' opinion on WASH in schools by conducting a survey on hygiene knowledge, attitude and practice in Lithuania, the Republic of Moldova and Romania. The survey was conducted by means of a paper-pencil questionnaire developed in English and then translated into the national

languages. The questionnaire included 24 questions divided in 2 thematic sections: (1) on hygiene knowledge, attitude and practice and (2) on accessibility and acceptability of WASH services in schools. The questionnaire was distributed to more than 2000 pupils in middle- and high school of the three selected countries in 2015. The WHO Regional Office for Europe supported the development and conduction of the survey.

Results and impact

- The study confirmed the gaps of WASH services in schools in the WHO European Region, showing that WASH services do not meet pupils' needs affecting healthy hygiene practice and fostering toilet avoidance, common in all countries.
- Results provide useful information on the challenges to tackle and their relevance as well as possible new approaches to improve accessibility. In particular, lack of consumable and low cleanliness is often reported, important aspects as they promote unhealthy practices. Adequate menstrual hygiene management was not always ensured. Results also showed that alternatives to tap water in the school bathrooms should be considered, as drinking from these is not common practice.

Challenges and lessons learned

- Students need to be reminded of health practices and their importance, such as hand washing and negative consequences of bad hygiene. There is a space for intervention with sustained education programmes including skill-based activities.
- It is important to assess the situation of WASH in schools and to consider disaggregated data to identify context-specific challenges and priorities. Peer to peer surveys, from young professionals to youth may facilitate data collection obtaining more honest responses.
- Proactive engagement of school end-users key to further assess the situation and better understand the reasons behind the identified issues, such as the lack of hygiene consumables. Involving students can help identifying context-specific problems and promote participatory, solution-oriented processes.

Potential for replication

The study could be replicated in any country of the Region and could be adapted to specific needs and aspects of interest (e.g. equity). The EEHYC is available to technically support countries in the adaptation and implementation of the survey at the local and national level and engaging the youth society. The implementation of a similar study format would be an important milestone to be considered in the National portfolios for action on environment and health to which countries committed under the Ostrava Declaration.

Contact

Name: Valentina Grossi
Organisation: European Environment and Health Youth Coalition

Case Study // Round Table SDG 6: Making universal access to water and sanitation a reality in the UNECE region

Bridging environment and health to ensure access to water and sanitation

France

Level: national

Summary

After a law on public health policy was adopted on 9 August 2004, France has developed a national plan on environment and health every 5 years. The third national plan PNSE 3 (2015-2019) aims at reducing, as much as possible and in the most efficient way, impacts of environmental factors on health, in order to enable anyone to live in an environment favorable for health. It is built on the base of priority health issues, issues of knowledge on exposures and their effects, issues for research and issues for local information. PNSE 3 defines several important actions on “water and health”, such as the promotion and the implementation of health safety plans for drinking water supply and equitable access to drinking water and sanitation. A link will be made with the declaration from the 6th Ministerial conference on environment and health, Ostrava 2017, and the National strategy for health 2018-2022 which has been published by the French government.

Situation

France is a Party to the Protocol on Water and Health (UNECE-WHO Regional Office for Europe -) and is a leading country in the field of activities on equitable access to water and sanitation in the UNECE region. Since the 3rd session of the Protocol Meeting of the Parties in November 2013 in Oslo and the 4th session of the Meeting of the Parties in November 2016 in Geneva at the Palais des Nations, 3 important publications have been prepared thanks to the constant support in France of the Ministry of Solidarity and Health.

In France, access to water is a fundamental right and the vast majority of homes are connected to the public networks for drinking water distribution. Water is not always in conformity microbiologically for 13.2% of the population residing in the areas of water supply feeding less than 500 inhabitants, but this rate is only 0.3% for areas with more than 10,000 inhabitants: there are still geographical disparities.

Strategy

Cross-sectorial and multi-stakeholder strategy based on the legislative governance frameworks: national water committee and national or regional health-environment plans

Results and impact

Focus on the main achievements and the links with French operators or regional health agencies regarding:

- experimentation of social water pricing in territories with different characteristics, such as rural areas or very huge urban areas;
- national action plan for sustainable services of drinking water and sanitation in French overseas regions (Guadeloupe, Guyana, Martinique, Reunion, Mayotte and St. Martin);
- distribution of the evaluation tool related to equity in access to drinking water and sanitation developed within the framework of the Protocol on Water and Health.

Challenges and lessons learned

The great diversity of drinking water supply in France, given the diversity of its territories: strength but also a challenge to improve the situation of universal and fair access to water in our country.

Potential for replication

The need for a close and constant link between the services of the ministries responsible for health and the environment, their operators responsible for the implementation and control of health and environment policies in the French regions, environmental health staff and sanitary engineers, and the scientists or economic sectors and citizens.

Contact

Name: Yannick PAVAGEAU, Deputy-head of water quality office and Vice-chair of the bureau to the Protocol on Water and Health

Organisation: General Directorate of Health, Ministry of Solidarities and Health, France

Case Study // Round Table SDG 6 - Sharing water: balancing competing needs in a context of declining resource

Optimizing water allocation for energy and hydrological extremes in transboundary context

Finland

Levels: local, national and international

Summary

Finland and Russia share hundreds of rivers crossing the border, of which about 20 major ones belong to the operative cooperation with joint monitoring and joint management plans. The largest transboundary river system is the Vuoksi River with a large upstream lake system in the Finnish territory, the river crossing the border and discharging to the Lake Ladoga. In the river there are four large hydropower stations, two in the Finnish side, two in the Russian side.

Joint water management is essential for flood and drought control, navigation, endangered species, recreation (SDG6) and well as energy security (SDG7).

Water allocation rules for the Vuoksi river system shared by Finland and Russia have been developed and implemented by a discharge rule and risk management plan to optimize hydropower production and minimize the damages caused by flood or drought and also taking into account other aspects dependent on water level fluctuations in both sides of the border.

Situation

The upstream lake system of the Vuoksi basin in Finland is large covering major parts of eastern Finland with many shoreline cities, industries and freetime housing. The developments are vulnerable for flood and potential damages increase rapidly with water level increase.

Due to high water flow and high fall heights the hydropower production is essential for energy security, particularly to match the changing demand of electricity.

The cooperation described contributes to transboundary cooperation in integrated water resources management measured by SDG indicator 6.5.2. and it fulfills all criteria set for the successful transboundary cooperation.

Strategy

Transboundary water cooperation between Finland and Russia originates from early 1960s, and the bilateral agreement was signed in 1964. The agreement covers all uses of water, and geographically the whole catchment of the transboundary watercourses. For the River Vuoksi system, where water allocation for hydropower and flood/drought control in both countries is essential, a complementary agreement, Vuoksi Discharge Rule, was signed in 1989. The Discharge Rule controls the water level fluctuations in upstream lake system and discharge from the lake to the River Vuoksi in order to minimize the flood/drought damages both upstream and downstream, also taking into account the hydropower production.

Recently, a comprehensive risk management plan has been developed and agreed to further improve the optimisation of water allocation in the system.

Results and impact

- water allocation through discharge regulation in case of extremes
- minimize damages caused by flood/drought
- maximize hydropower production
- secure endangered species
- secure navigation

Challenges and lessons learned

To make the cooperation and adaptive management successful it is important not only to achieve mutual understanding and trust in political level, but also to commit the managers, operators and stakeholders to cooperation. In the Vuoksi case this means regional water managers and hydropower companies in both sides.

Potential for replication

General approach is replicable in other transboundary waters, but issues and their implications are always case specific. The generic features comprise of mutual understanding and political will, sufficient institutional capacities, appropriate frameworks and processes also nationally, joint hydrological monitoring and forecasting, data exchange and understanding the implications.

Contact

Name: Seppo Rekolainen
Organisation: Ministry of Agriculture and Forestry

Case Study // Round Table SDG 6 - Sharing water: balancing competing needs in a context of declining resource

Water quality in Switzerland – connecting drops at different depths

Switzerland

Levels: national, subnational and local

Summary

Water scarcity is not just about quantity, but also on quality. Raising water temperature affects water quality by the propagation of algae impacting drinking water from lakes and rivers.

Safeguarding water quality amounts to multitasking through sectors, with tools and different levels of federal, cantonal and communal administration in Switzerland, criss-crossing water bodies basins:

- Using diverse instruments (laws, Payments for ecosystem services, promotion of sustainable agriculture, green infrastructure) to decrease nitrates and phosphates pollution.
- Preventing micropollutants (contained in medicine, cleaning, phytosanitary, as well as cosmetic products and biocides) with an Action Plan on the sustainable use of phytosanitary products connecting health, agriculture and environment or installing technology in wastewater treatment plants, with priority to those close to the borders upstream international rivers.
- Renaturation of rivers through a cooperation between environmental protection, hydropower and agriculture, while enhancing flood protection, as well as fauna and flora.
- Implementing development aid programmes on water quality in water stressed countries across the world base on the Swiss experience

Situation

Switzerland should have sufficient water resources in the future (1500 lakes, many rivers, groundwater, glaciers and snow) although seasonal scarcity events do occur. Agricultural pollution through nitrate and phosphate decreased. 97% of the population is connected to a wastewater treatment plant. By 2040, more than 50% of wastewater will be treated for micropollutants, a new challenge. The supplementary treatment cost will be 9 CHF/person/year, adding to classical cost wastewater treatment 20-70 CHF/month for a family of four. This is based on full cost recovery based on user – polluter pays principles.

The morphology of rivers has been greatly modified over more than 40% of its length, 22 % of rivers are in a bad ecomorphological state and 85 % wetlands are threatened.

Strategy

Using a whole range of tools at different levels and moments: Laws and ordinances drive the implementation through multiple actors from the public and the private sectors, from water, energy, agriculture, tourism, etc. Adding to this regular cross-sectoral dialogues and information, education, products use guidance, technical guidelines on IWRM, payments for ecosystem services, adequate technology and full cost recovery.

Results and impact

- Improved water quality and protection against floods
- Protection and restoration of ecosystems
- Better health
- More awareness on products and their use (informed choice when shopping)

Challenges and lessons learned

- After focusing on larger rivers, actions are taking place to improve the smaller ones.
- The importance of water-related ecosystems to water management (link with SDGs 7 and 15)
- The general challenge for water specialists to be obliged to develop end of pipe technology for many common (household and cosmetic) products which residues should never land into water in the first place (links with SDG 12 on SCP and 11 on cities)

Potential for replication

The Swiss experience can be replicated as many wastewater treatment plants are at the point of needing refurbishing across the region.

Dialogue on water with the sector of agricultural is crucial in the region, while engagement with hydropower is also essential

The cooperation across ministries and sectors, including across the different levels of public administration (national to local) is essential but it needs time, open communication and trust.

Contact

Name: Sibylle Vermont (sibylle.vermont@bafu.admin.ch)

Organisation: Swiss Federal Office for the Environment, 3003 Bern, Switzerland

Case Study // Round Table SDG 6 - Sharing water: balancing competing needs in a context of declining resource

Water allocation in transboundary river basins: Hungary's experience

Hungary

Levels: national, subnational and transboundary

Summary

The objective of the case study is to share Hungary's experience from water allocation related to the shared rivers, groundwater aquifers. It is essential to start international cooperation as sustainable agriculture/food security (SDG 2) and sustainable energy (SDG 7) also depend on effective integrated water resource management (SDG 6). This draws upon an on-going inventory how the transboundary water cooperation agreements address the allocation challenge. We would like to show the existing gaps between theory and practical implementation through good and limited practices applied in the region. Also we would highlight what are the linkages with SDG implementation with special attention to the IWRM application on the transboundary regions. The Carpathian region can be affected by climate change effects significantly, which can result in changes of river flow patterns. Recent years have shown that we have reached the lowest ever measured water levels in the river systems, causing water scarcity in several regions. To compensate for the scarcity, especially at times of drought, we are facing with increasing water demand from agriculture for irrigation. In the near future, we have to start a negotiation with the neighbouring countries to identify the existing and future needs from water users, taking into account of the ecological flow (to meet environmental needs) as well.

Situation

Some 95% of surface waters flowing into Hungary originate from abroad and almost all groundwater aquifers are shared with the neighbouring countries. Hungary has the merit of having set up the legal basis and institutional frameworks for cooperation in water management. Currently there is an increasing need to develop irrigation to mitigate climate change effects. River flow patterns have changed due to river regulations, afforestation, hydropower development, operation of reservoirs, etc. Although some bilateral cooperation agreements have provisions regarding the flow allocation, many completely missing it.

Strategy

To solve the emerging problem, it is necessary to identify the water demands covering the whole basin. It is necessary to elaborate joint water balance with the neighbouring countries, based on a jointly developed and approved methodology. Taking into account the existing and future demands, we have to agree on water sharing and on a minimum flow which has to be provided downstream, taking into account natural conditions as well. Hungary's bilateral commissions can take a leading role to identify these assets. The commissions provide framework for agreeing about water allocation. Joint bodies are also essential for progress on the transboundary aspect of SDG target 6.5 (indicator 6.5.2)

Results and impact

The results of the cooperation could be the following:

- Joint methodology to elaborate a water balance in a border region, with special attention to the low water periods in the framework of the bilateral water commissions
- Identification of the water demands from all stakeholders (water supply, agriculture, industry (cooling water), recreation, hydropower, navigation, ecology)

- Joint agreements or regulations on water allocation.

Challenges and lessons learned

No jointly accepted methodology.

New, emerging issue.

Politically very sensitive.

Potential for replication

Setting joint water balance can be replicated in any shared river/aquifer.

Contact

Name: Peter Kovacs (peter.kovacs@bm.gov.hu)

Organisation: Ministry of Interior, 1051 Budapest, Jozsef Attila u. 2-4.

Additional Case Study // SDG 6

Country Small-scale water supplies and sanitation under the Protocol on Water and Health Germany

Summary

The Protocol on Water and Health provides a platform for improvements particularly contributing to SDG 6, including through its activity area on small-scale water supplies and decentralized sanitation in the European Region. It provides tools, such as guidance on the safe management of small systems and on how to take action at the policy level, contributes to the collection of baseline data on small water supplies, and promotes the approaches and outcomes of pilot projects for data gathering and safe management of small systems. Projects and tools from this activity may inspire action taken in other countries, particularly within the European Region. Thus, the Protocol contributes to decreasing rural-urban disparities regarding access to safe services.

Situation

The main aim of the Protocol on Water and Health to the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes is to protect public health from water-related diseases in the UNECE region. The United Nations Economic Commission for Europe (UNECE) and the World Health Organization (WHO) provide the joint secretariat for the Protocol.

Parties to the Protocol are required to establish national targets to achieve or maintain a high level of protection from water-related diseases tailored to the national context, just as countries set national implementation priorities and targets to implement the Agenda 2030.

Small-scale water supplies and sanitation are one of the priority areas under the Protocol's workplans and Germany, together with Serbia, co-leads the activity on small-scale water supplies and sanitation, and background information on the situation, related challenges and possible improvements were published in the document [Small-scale Water Supplies in the pan-European Region](#).

Strategy

To get a better picture of the often prevailing rural-urban disparities with respect to access to safe drinking water and sanitation services, comprehensive data on small-scale water supplies in the countries of the European Region was collected and published in the document [Status of small-scale water supplies in the WHO European Region: results of a survey conducted under the Protocol on Water and Health](#).

In order to further improve the evidence base regarding drinking-water quality and prevailing risk factors, Rapid Assessments of Drinking-Water Quality (RADWQ) were conducted in [Georgia](#) and [Serbia](#). An international group of experts developed the guidance [Taking policy action to improve small-scale water supply and sanitation systems. Tools and good practices from the pan-European Region](#) with recommendations for improving the situation of small-scale water supplies and decentralized sanitation.

Pilot projects on the application of the *Water Safety Plan-approach* (WSP) in small-scale water supplies are promoted to facilitate that these systems sustainably provide services that are safe and supported through providing [WSP field guidance for small systems](#). A [workshop on WSP in the EECCA region](#) and a [meeting of the International Small Community Water Supply Network](#) took place in 2014.

These activities support the SDGs idea of providing equitable access to these services –leaving nobody behind, including those living in rural areas, and contribute particularly to Targets 6.1 and 6.2 (safe and sustainable drinking water and sanitation), as well as to SDG 10 of reducing inequalities .

Results and impact

The survey on small-scale water supplies in the region provides valuable baseline data at the outset of the 2030 Agenda, and showed that 23% of the population of the region are estimated to receive their drinking-water from small supplies. Compliance with microbiological parameters in sub-categories of small-scale water supplies ranged from 40-100%, showing possible areas for improvement to increase compliance rates.

The RADWQ conducted in small-scale water supplies in pilot districts in Georgia revealed amongst others that microbial contamination was a bigger issue than chemical contamination, and that disinfection was not or inadequately in place. The outcomes represent an evidence base and starting point for further development of the regulatory framework with respect to small-scale water supplies, including uptake of the WSP approach. The RADWQ conducted in small-scale water supplies in Serbia showed that compliance rates in small systems were generally lower than in urban systems, and identified priorities for improvement interventions and induced policy actions.

Countries across the region have taken a number of actions in order to improve the situation of small-scale water supplies, and the Protocol on Water and Health provides a good platform to collect data and share experiences on these systems. Documented policy tools address the areas of baseline analysis and target-setting, legislation, technical standards, surveillance, financing, education and qualification, awareness-raising, and cooperative arrangements, as well as good practices, including 42 case studies showing how these have already been successfully applied in countries from the region. Countries' experiences with WSPs, success factors for their application in small systems as well as building blocks for successful implementation and scale-up are documented and shared in the outcomes' report of the [workshop on WSP in the EECCA region](#). The approach is applicable to all sizes of systems, and contributes to improving the safety of drinking-water supplies, including small ones.

Challenges and lessons learned

A number of factors make the collection of data on small-scale water supply and sanitation systems challenging, including the remoteness, geographical spread and number of these systems.

At least at the national level sufficient data are not typically available in order to facilitate easy comparison of parameters analyzed and compliance levels throughout the region as indicators for the systems' safety. However, tools exist for gathering such data, for example through RADWQs or through taking risk-based approaches to surveillance. Especially in small systems, benefits can be gained from applying the WSP approach for their safe management and by supporting their operation through taking measures at the policy level to create an enabling environment. Implementation of the Protocol at national level, especially through its targets setting mechanism helps countries to prioritize SDG 6 in their national agendas and to achieve improvements towards aspirations of SDG 6, for example through improving the situation of small-scale water supplies and sanitation.

Potential for replication

The collection of tools and good practices shows that many approaches to improve the situation of small-scale water supplies and decentralized sanitation have already proven in practice in the countries all across the region, which can inspire future action in other countries. A number of workshops was conducted under the Protocol e.g. in Albania, Belarus, Kyrgyzstan, Serbia and Uzbekistan in order to facilitate adoption of activities at the national levels to improve small systems. Although the information presented is from the pan-European Region, similar approaches may also be applied outside this region.

The WSP approach is applicable to all kinds of water supplies, also in other countries, and may be implemented using the [WSP field guidance for small systems](#) developed within the Protocol context. The approach taken for the RADWQs in Georgia and Serbia, as well as the outcomes are documented and can be used as a basis to implement similar surveys in other countries.

Contact

Name: Bettina Rickert

Organisation: German Environment Agency (Umweltbundesamt, UBA)

Schichauweg 58, 12307 Berlin, Germany

bettina.rickert@uba.de

Case Study // SDG 6

Stakeholder dialogue on the national strategy for micropollutants

Germany

Level: national

Summary

The strategy intends to prevent and reduce inputs of micropollutants to the aquatic environment. Guided by the precautionary principle and the “polluter pays” principle, the stakeholders have developed, in a process of dialogue, practicable and viable solutions. The outcomes of the dialogue process shall contribute to a shared understanding of the technical issues, and the proposal of a package of strategies and measures suited to addressing micropollutants at nationwide level.

Situation

1,200 different human pharmaceuticals are assumed to have an environmental impact, of which approx. 9,000 t/a are used in Germany. For 2011-2013 diclofenac EQS has been exceeded at approx. 65 % of the sampling sites. In addition approx. 55,000 t/a of biocides and 49,000 t/a of pesticides are used in Germany. Most of these substances are not removed by conventional WWTPs and diffuse runoffs from agricultural areas are stressing the waterbodies. Some of the mentioned substances have adverse effects on aquatic ecosystems and/or on drinking water extraction from raw water. But there are still huge knowledge gaps concerning the effects.

Strategy

As a part of preparations for a federal-government strategy to protect the aquatic environment against micropollutants, a multi-stakeholder dialogue on a micropollutant Strategy of the Federal Government was launched on 7 November 2016. The group of stakeholders consisted of the pharmaceutical, chemical, textile and print industry, user side representatives, environmental protection and consumerism organizations, watermanagement companies and local authority representatives. In a first phase up to June 2017, recommendations to policy-makers were elaborated with the stakeholders; the issues addressed in that phase will be further concretised in a follow-up phase. The multi-stakeholder dialogue focuses on options for action to reduce inputs to waters from biocides, pesticides, detergents and cosmetics, household and industrial chemicals, and pharmaceuticals.

Results and impact

- A policy paper with 14 recommendations has been handed over to the Minister of Environment on 27. Juni 2017
- The second phase with further concretization will start on 21.2.2018

Challenges and lessons learned

Biggest challenge was to choose the right stakeholders as well to generate consensus among them on the different topics.

Contact

Name: Stephan Luther

Organisation: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB)

Case Study // SDG 6

New sewage sludge ordinance reforms sewage sludge utilisation and sustainable phosphorus utilization

Germany

Level: national

Summary

The new sewage sludge ordinance came into force on 3rd October 2017. One main objective is the sustainable and safe utilization of phosphorus by recovering phosphorus, especially from municipal sewage sludge. The recovered phosphorus should be returned to the economic cycle, e.g. as fertilizer in agriculture. With the prohibition of the soil-related utilization of sewage sludge from big sewage treatment plants (greater than 50,000 population equivalents) as fertilizer from 2029, the disposal of critical substances from waste water treatment with sewage sludge on soil and into the environment will be reduced.

Situation

In Germany meanwhile more than 60 % of the sewage sludge is burned, usually without using the phosphorus potential. Only ca. 30 % is utilized for agriculture or landscaping purposes (nutrient recycling). Most sludge not fulfils the legal requirements (fertilizer regulation, sewage sludge ordinance limit values) or is in competition with other fertilizers such as manure. Moreover, sewage sludge contains critical and risky substances from sewage which effects on soil and environment are not examined. In order to reduce the risks significantly, safe disposal of sewage sludge should be focussed without losing the valuable phosphorus inside.

Strategy

The sewage sludge ordinance was fundamentally revised in 2017. Limit values of heavy metals and organic substances for the utilization of sludge as fertilizer are tightened. In 12 respectively 15 years the agricultural and landscaping use of sewage sludge from treatment plants over 100.000 respectively 50.000 PT is forbidden. The phosphorus from this sludge has to be recovered if its content is over 2 %. Phosphorus can be recovered directly from the sludge (at least 50 %) or after its thermic use. If sludge is burned at least 80 % of the phosphorus in the ashes has to be recovered. It is also allowed to store the ashes separately to later recover the phosphorus.

Results and impact

Since the ordinance entered into force recently, results can be expected after transition period in 12 to 15 years. Actually the disposal of sewage sludge is restructured in many cases, the trend for agricultural utilization decreases and techniques for the recovering of phosphorus are developed and verified in large scales.

Challenges and lessons learned

The implementation period just started, but as a challenge can be mentioned the development and implementation of new phosphorus recovering techniques and strategies into the existing market.

Potential for replication

The German sewage sludge strategy with the reduction of pollutant inputs into soils and the protection of natural phosphorus resources could be used as an example for other countries.

Contact

Name: Unit: WR II 4; email: WR114@bmub.bund.de

Organisation: Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
Division Municipal Wastes, Thermal Treatment of Waste – Unit WR II 4



SDG 7: Affordable and clean energy

Round table: [Improving the efficiency of the energy system](#) (1 March 2018, 15:00-16:30)

- Establishment and operation of the Budgetary Fund for Energy Efficiency
Serbia
- Raising awareness for energy consumption through a marketing campaign “Energy Mathematics”
The Former Yugoslav Republic of Macedonia
- Improving Energy Efficiency – Launch of the State Program on Energy Efficiency
Ukraine
- Applying industrial waste heat to supply new city district in Hamburg
Germany

Round table: [Transforming energy in support of the 2030 Agenda](#) (1 March 2018, 16:30-18:00)

- Cleaner Electricity in the Czech Republic
Czech Republic
- Country WISE SEE – Women in Sustainable Energy South-East Europe
Serbia
- Coal mine methane production at Karaganda coal basin to enhance mine safety and optimize Economics
Kazakhstan

Case Study // Round Table SDG 7: Improving the Efficiency of the Energy System

Establishment and operation of the Budgetary Fund for Energy Efficiency

Republic of Serbia

Level: national

Summary

In order to achieve its international obligations and strategic goals through support for implementation of energy efficiency investments, Republic of Serbia has established Budgetary Fund for Energy Efficiency (BFEE). Due to the small annual budget, at this stage, BFEE has mainly demonstration and awareness rising effect, however its operation clearly indicates that with properly set technical requirements savings of 40% may be achieved. Operation of such facility has to be constantly improving in order to achieve best possible results.

Situation

Energy intensity of Republic of Serbia is 2-3 times higher than in neighbouring EU countries and 4-5 times higher than several times higher than the EU average. In 2014, GDP per capita in Serbia was 4,635 € while the average GDP per capita in 28 EU countries was 27,400 €. Total primary energy supply is largely dominated by coal while more than 45% of the final energy consumption is within the building and services sector (it is shown jointly in Energy Balance).

Ministry of Mining and Energy of Republic of Serbia (MoME) is in charge of energy efficiency policy. There are the two main laws in the field of energy efficiency: Law on Efficient Use of Energy (LEUE) and Law on planning and construction. As a signatory to the Energy Community Treaty Republic of Serbia accepted obligations to implement EU Acquis in the EE field and achieve certain targets in this area.

Thus potential for energy efficiency improvement in Republic of Serbia is evident, however, economic situation and low awareness of energy end users is not favourable for implementation of energy efficiency (EE) projects.

Strategy

Republic of Serbia has so far adopted three National Energy Efficiency Action Plans (NEEAP) and has set a target to save 9% of final energy consumption (0.7524 Mtoe) in the period 2010-2018. It is foreseen that 58% of this target should be achieved in the building and services sector, 25% in the transport sector and 18% in industry.

The target in the first NEEAP for the period 2010-2012 was very low, only 1.5%, as at that time, there was no regulation on energy efficiency or financing mechanism to support energy efficiency improvement except some donor/IFI funded projects.

In order to support target achievement LEUE was adopted in 2013 and has introduced several mechanisms aiming to force and support EE among which: Energy Labelling, Energy Management System, Budgetary Fund for Energy Efficiency and ESCO financing.

Budgetary fund for improvement of energy efficiency was established and started its operation in 2014 with the aim to finance/co-finance implementation of energy efficiency measures. BFEE is a budget line

in the Budget of the Republic of Serbia operated by the Ministry of Mining and Energy, funded through the Budget of the Republic of Serbia (State Budget) and Donations. Beneficiaries could be legal and private persons. Fund awards financing through Public calls, in accordance with the Annual programme adopted by the Government each year and Rulebook prescribing rules for funds allocation.

Results and impact

- In 2014, the first Public Call was issued for financing energy efficiency projects in municipal buildings. Eleven projects were selected and implemented during 2015 and the first quarter of 2016. The overall level of investment was about €660,000, and resulted in consumption declined by 2 GWh (40 percent) compared to the previous period. Fund is providing maximum 70% of the investment.

- In 2016 two public calls for investment in EE projects in municipal buildings were launched:

- In the first public call 15 projects were awarded a financing of about €1,000,000 (source of funding - Budget of RS) and are expected to result in savings of about 4.5 GWh (40 percent on average).

- Second public call was implemented with the support of UNDP and GEF funding. Through this public call 13 projects were awarded a financing of about €200,000 (source of funding - Budget of RS) and USD 500,000 (source GEF/UNDP) and are expected to result in savings of about 3 GWh (40 percent on average).

- In total investment of about €3,500,000 is secured for 39 projects (27 finalized so far) with the contribution from municipalities of about 30%. It is expected that overall energy savings will be about 9.5 GWh (40%) with CO₂ reduction of about 4,200 tCO₂. Most common measures are reconstruction of thermal envelope including replacement of obsolete windows and reconstruction of heating installation (sometimes including fuel switch).

- One of the most successful projects was Energy Efficiency Project in Kindergarten "Poletarac" in Mali Zvornik:

- Replaced obsolete windows with new polyvinyl chloride (PVC) windows
- Installed insulation on the roof and outer walls
- Replaced the existing oil boiler with a new pellet boiler
- Installed thermostatic valves on radiators
- Energy consumption **before** the project **89,048** kWh
- Energy consumption **after** the project **28,050** kWh
- Energy savings 68.5%
- Total investment €50,000
- Contribution of the Budgetary Fund 65%

Challenges and lessons learned

- Quality of documentation submitted in the application to the public call is usually not of a good quality

- Applications are often missing some of the documents required by the public call so some potentially good projects are not awarded funds

- There is no separate unit in the Ministry dealing with the operation of the Budgetary fund so preparation of Public Call and its evaluation, monitoring and payment processing for selected projects is difficult and time consuming.

- Being placed in the Ministry, Budgetary fund operation includes a lot of administration and time-consuming decision making process

- BFEE funds coming from the state Budget are available on a yearly basis and are usually awarded based on the success of spending in a previous year. As the process of selection of the projects and their implementation (including public procurement by municipalities) takes often more than a year,

some portion of the funds for each year include financing of the projects from the previous years, meaning that there is less money to be awarded to new projects in a new year.

As a feedback from the implementation of the first public call in 2014:

- In 2015/2016 rulebook related to BFEE operation was revised in order to enable easier evaluation of the projects

- Text of the first Public Call for 2016 was also revised and many more predefined forms were introduced, projects scoring was changed so projects implementing more predefined measures had the advantage and some additional technical documentation was requested. In order to facilitate application process a workshop for municipalities was organized and explanations provided. At the website of the Ministry in the public call section, all received questions and answers were regularly published during the time for submission of the applications. Standard model contract was also further improved.

- Text of the second Public Call for 2016, implemented jointly with UNDP, was additionally revised to reflect criteria of GEF funded project and reflect specific situation with two sources of funding. For this public call, UNDP provided technical assistance: in the process of evaluation of applications, checking public procurement documentation prepared by the municipalities before tender issuing, checking technical documentation before payment and sight visits. In this public call, some specific requirements in terms of implementing some parts of energy efficiency regulation and policy were included.

- In order to make further improvement in the field of energy efficiency financing the Ministry of Mining and Energy:

- started to work on further improvement of the BFEE operation rulebook which would enable implementation of the process of projects selection in two years which would allow selection and preparation of documentation in one and project financing in second year. This should allow spending of the total amount awarded by the State Budget to BFEE and thus enabling increase of these funds and spreading its activities to other beneficiaries as well.

- initiated introduction of a fee for energy efficiency on energy and energy carriers, which should increase funds available for energy efficiency

- initiated an IPA funded project aiming to identify legal setup for establishment of a Fund for energy efficiency as an independent institution.

Potential for replication

Technical requirements implemented by the BFEE can be replicated in any projects implemented in Serbia or region.

Any funds to be established at a national or any other level may benefit from the experience of BFEE.

Contact

Name: Antonela Solujic, Head of Energy Efficiency Department

Organisation: Ministry of Mining and Energy

Case Study // Round Table SDG 7: Improving the Efficiency of the Energy System

Raising awareness for energy consumption through a marketing campaign “Energy Mathematics”

The former Yugoslav Republic of Macedonia

Level: national

Summary

The “Energy Mathematics” campaign is part of the national Platform for Energy Efficiency, a long-term cooperation among the privately owned electricity distribution company EVN Macedonia, the Ministry of Economy, and the Energy Agency of the Republic of Macedonia. The platform has functioned since 2012.

The “Energy Mathematics” campaign, which began in July 2014 and is on-going, was designed to show customers how small changes in their daily habits and relatively minor investments can significantly reduce energy consumption.

Situation

The campaign was conceived as a response to growing energy consumption in the country and, more specifically, the rising energy intensity of the housing sector. At that time, there was no actual understanding on the cost-effective measures to save energy in a typical household, nor did the citizens have available information to be further educated in the energy saving measures that were available, like energy audits, insulating materials, energy management systems, etc. In addition, it has been observed that the usage of biomass for individual households in the more dense urban areas also had an effect on the air pollution in those cities, thus improvement of the energy consumption/efficiency had an additional effect of improving the air quality in the country.

Strategy

The government decided that the best way to reverse the adverse energy intensity trend was to launch a promotional campaign and to engage the general public in understanding how they use energy on a daily basis. This approach was chosen because it was considered to be optimal in terms of affordability, outreach, and impact.

The Platform for Energy Efficiency comprises a wide range of educational activities aimed at various categories of customers:

- A targeted television series of eight episodes explained in layman’s terms different ways of saving energy in households;
- Illustrative billboards have been erected in key locations;
- Explanatory informational materials have been included in consumers’ energy bills;
- Targeted activities for students, businesses and media provide educational tools for current and future professionals, thus further increasing the impact of the campaign.

Results and impact

As a consequence of the “Energy Mathematics” campaign and the broader Platform for Energy Efficiency, estimated 1.6 million citizens and 18 thousand small businesses have been able to learn

about principles of energy efficiency at home and in everyday life. They also have been able to appreciate how energy auditors work in the field.

- In the first year (2014 - 2015) of the “Energy Mathematics” campaign, gross national electricity consumption per capita decreased by 2.3% (from 4,129 kWh per capita to 4,031 kWh per capita);
- Final electricity consumption in households per capita decreased by 1% (from 1,438 kWh per capita to 1,473 kWh per capita);
- Overall energy intensity decreased by 6.3% (from 471.3 kgoe per EUR 1,000 of GDP to 441.5 kgoe per EUR 1,000 of GDP). Of that amount, 2.4% were directly attributed to the campaign “Energy Mathematics”;
- Saved energy is estimated at 202.8 GWh;
- Estimated greenhouse gas emissions reduction is estimated at 393 kt CO₂. Energy Agency attributes 50% of these savings and reductions to the campaign.

In 2016, the expert jury of the International Public Relations Association (IPRA) has awarded the most prestigious Golden Award to the “Energy Mathematics” campaign that EVN Macedonia, the Ministry of Economy and the Energy Agency of the Republic of Macedonia have been implementing as a part of the Platform for Energy Efficiency.

Challenges and lessons learned

The Energy Mathematics campaign and the Platform for Energy Efficiency responded to specific behavioural issues and investment barriers to improving energy efficiency generally and specifically in buildings. The government undertook a detailed statistical analysis of the challenge of energy efficiency, and realized that the greatest impediments were lack of understanding by the general public and by professionals of the potential for improvements.

Main challenges were:

- Answering the question: “How to transfer the message for energy efficiency to the common household?”
- Removing the already established opinion that energy efficiency is expensive and it interferes with daily life comforts,
- Who will finance the campaign? Who bears the social responsibility?
- Setting the target that we wish to achieve.

The main lesson learned: Explaining the technical issues using common and easily understandable language is a challenge, but it brings benefits long after the marketing campaign ends. Education is the first and cheapest energy efficiency measure.

Potential for replication

This type of campaigns could be replicated in every country. It has to be customized to local conditions to address the typical mentality of the people living in the country, as well as to transfer local experience for energy efficiency with approachable language.

Contact

Name: Aleksandar Dukovski
Organisation: Senior Energy Expert

Case Study // Round Table SDG 7: Improving the Efficiency of the Energy System

Ukraine: Improving Energy Efficiency – Launch of the State Program on Energy Efficiency

Ukraine

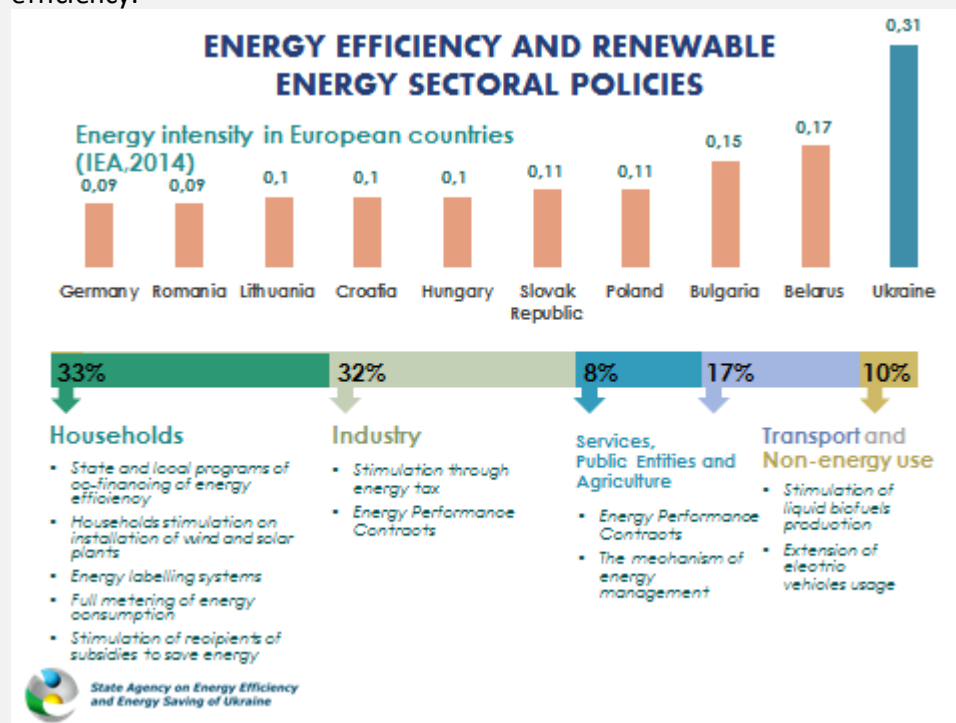
Level: national

Summary

The government of Ukraine launched the State Program on Energy Efficiency in 2016. The program foresees loans to finance the costs for a variety of energy efficient materials and equipment, such as insulation materials, energy efficient windows, and energy meters for individual households and condominiums. The program is part of Ukraine’s National Energy Efficiency Action Plan that is designed to run until 2020. The plan was developed in line with the EU Directive 2006/32 and Ukraine’s obligations as a member of the Energy Community. The goal of the National Energy Efficiency Action Plan is to reduce final energy consumption by 9 percent. Around €35 billion will be required to meet the action plan’s targets.

Situation

Energy independence is a matter of national security for Ukraine. One of the priority issues for ensuring energy independence for the government is the reduction of natural gas consumption, including both through substitution of natural gas by renewable energy sources and through improvements in energy efficiency.



Energy intensity of Ukrainian economy is among the highest in Europe. The residential sector consumes the biggest share of energy in Ukraine.

Strategy

At the moment one of the ways to reduce energy consumption for households is “warm” loan. In order to receive reimbursement for energy efficient materials or equipment, a household or a condominium must apply to a designated bank with required documents (invoice for the purchased goods). The bank contacts the State Agency on Energy Efficiency and Energy Saving for approval, receives funds, and transfers money to the borrower.

Results and impact

The total amount of loans issued as of the end of 2017 is over €150 million for 373 thousand households. As a result of the various measures and incentives implemented in the period from 2013 to 2017, 6.02 billion cubic meters of natural gas were saved by individual consumers, heat production companies, and public institutions. In line with the renewable energy source development strategy, 1.93 GW of modern heat capacity was installed in the past two years. About €460 million were invested in these projects.

Challenges and lessons learned

Key challenges for the program were raising awareness among consumers and building owners of the availability of the program and the procedures for qualifying. In addition, the program obliged the potential beneficiaries to invest in the measures before initiating the approval procedures, creating both uncertainty and risk for the households and owners.

Potential for replication

Experience of Ukraine in reduction of gas consumption through the “warm” loans can be applied in countries with emerging economies and lack of financial resources.

Contact

Name: Konstatyn Gura

Organisation: State Agency on Energy Efficiency and Energy Saving of Ukraine

e-mail: kostiantyn.gura@gmail.com

Case Study // Round Table SDG 7: Improving the Efficiency of the Energy System

Applying industrial waste heat to supply new city district in Hamburg

Germany

Level: national and local

Summary

The case study demonstrates that policy makers on federal level, local stakeholders and industry representatives need to work together in order to implement large scale energy efficiency projects. Only through the support from federal level, the economic viability of a project to supply a new city district in Hamburg with waste heat from a copper production plant was secured.

Situation

At the port of Hamburg a new city district “Hafencity Ost” is currently under construction. A nearby copper production facility owned by the company Aurubis has so far used water from the river Elbe to cool waste heat from its production. It was considered on local level to utilize this waste heat to supply the new city district with heat by constructing a new heat network and by investing in technical adjustments at the copper plant. Unfortunately the economic viability of the project was not given without further financial support, despite its economic benefit for the local economy and the environmental benefits.

Strategy

As part of the National Action Plan on Energy Efficiency (NAPE) the German Federal Ministry for Economic Affairs and Energy (BMWi) introduced in 2016 a new incentive scheme to promote internal and external utilization of waste heat in industry. The new program aimed to enable projects such as the Hamburg example by providing financial support for the supplier of waste heat as well as for the heat consumer. With the financial incentive from the new program, BMWi was able to secure the economic viability of the project. In this process the Ministry cooperated closely with the City of Hamburg, Aurubis and Enercity Contracting GmbH.

Results and impact

- An energy delivery contract to supply the new district was signed in February 2017 between Aurubis and Enercity Contracting GmbH.
- As a first step Aurubis will utilize 160.000 MWh waste heat. This could lead to annual GHG savings of 32.000 t CO₂.
- Investment costs (for the heat network as well as technical adjustments at the copper plant) are at € 33 Mio. BMWi will provide €8 Mio. via its promotional scheme.
- Aurubis intends to supply other Hamburg districts with the remaining waste heat potential of its facilities.

Challenges and lessons learned

- Need to incentivize heat providers as well as customers: For the successful realization of waste heat utilization projects, it was decided that the program promotes both investments on the part of the waste heat supplier (Aurubis) and necessary infrastructure investments of the waste heat customers (resp. municipal utilities).
- Support from the municipal level, in particular a policy that sets strategic and reliable goals for low-carbon heat supply.
- Incentives for the industry, in particular promoting of investments for the technical adjustments for the provision of waste heat and securing appropriate heat prices for the heat provider (ROI).
- Non-bureaucratic solutions as well as good coordination in the event of challenges occurring during the implementation of a complex long-term project.

Potential for replication

The experience shows that there is a **need for local heat supply planning procedures**. Policy makers should support local planning agencies with information and knowledge. Tailored financial incentives are needed that allow local stakeholders to secure the economic viability of large-scale energy efficiency projects.

Contact

Name: Ulrich Benterbusch, Deputy-Director General

Organisation: German Federal Ministry for Economic Affairs and Energy (BMWi)

Case Study // Round Table SDG 7: Transforming energy in support of the 2030 Agenda

Cleaner Electricity in the Czech Republic, Emission Drop, Increased Flexibility and the Co-existence of the Thermal Power Generation with the Nuclear and the Renewable Resources in Czech Energy Mix

Czech Republic
Level: national

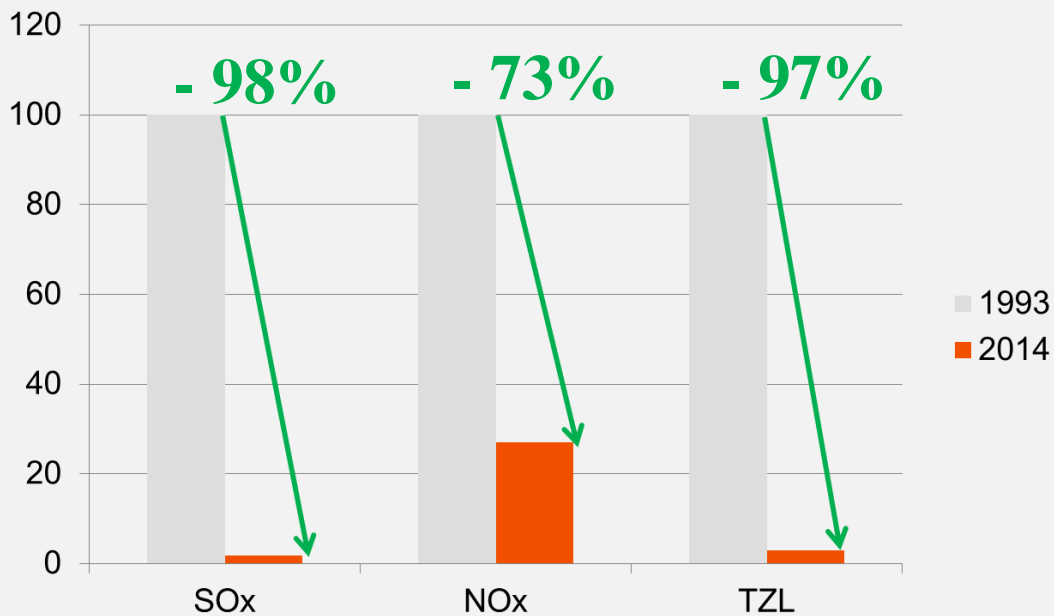
Summary

1. New Flexible Gas Power Plant in Pocerady – Quick Flexibility
2. Complex Reconstruction of the Power Plant Prunerov – Flexibility in Medium Term
3. New HELE Flexible Power Plant in Ledvice – the test operation started at the end of 2017
4. Energy Mix – Renewables 10%, Gas 8,5%, Nuclear 30%, HELE Domestic Brown Coal 44%

Situation

The Decrease of the Most Important Emissions from Refurbished Power Plants Prunerov and Ledvice

CAPEX invested over CZK 150 Billion = EURO 6 billion



Strategy

The Government of the Czech Republic adopted the State Energy Policy in 2002. Increased production from the renewables in neighbored Germany as well as in the Czech Republic and the stable use of the nuclear energy is supported by the flexible Clean Coal High Efficient and Low Emission Technology. To secure a diversification of the energy resources, the first highly flexible gas-fired power plant has been build.

This approved State Energy Policy has been updated in 2015. CO₂ emissions in the Czech Republic have dropped since 1990 to 2017 by 60%. Country currently evaluates the construction of new nuclear units with zero CO₂ emissions. Coal use in the electricity production will decrease from around 50% to 15% in 2040, but use of HELE coal-fired power generation is inevitable for the stability and reliability of electric power supply.

Results and impact

Results are the **rapid decrease of emissions** by more than 90% (SO₂, PM) and by $\frac{3}{4}$ NO_x – above. **CO₂ emissions are at 40% of 1990 levels.**

Country is net electricity exporter

Electricity system adapted to increased electricity production of Germany from renewables.

Challenges and lessons learned

Electricity production is the long term technical, political and strategic challenge . Energy mix remains the responsibility of the Member State in EU . However, the State Energy Policy has the European dimension, because the electricity market, the emissions and the commodities of energy have no boundaries.

Potential for replication

Each Country can replicate the positive experience.

Contact

Name: **Vladimir Budinsky, UN ECE GoE CE, the Vice-chairman**

Organisation: **Severoceske doly, Chomutov, Czech Republic**

Case Study // Round Table SDG 7: Transforming energy in support of the 2030 Agenda

Country WISE SEE – Women in Sustainable Energy South-East Europe (pilot project in Serbia)

Serbia

Level: national

Summary

WISE SEE project aims to promote productive, equitable and meaningful participation of women in sustainable energy development in Serbia and the wider SEE region.

Serbia women have been powerful agents of change in transition to sustainable energy. During the last decade, they have demonstrated high level of leadership capacity in transition from less to more sustainable energy solutions and in promoting environmental protection and climate change action. Some of women who actively participated in the development of sustainable and renewable energy sectors are: Ana Brnabić, former Project Director at Continental Wind Serbia (CWS) (now serving the first female Prime Minister of Serbia), Zorana Mihajlović, former Minister of Energy (now Deputy Prime Minister of Serbia), and Danijela Božanić, Head of Climate Change department, Ministry of Environmental Protection.

Apart from women working for the Government and its institutions, a significant number of highly skilled and capable women are leading activities in sustainable energy, climate change and environmental protection, for example: Maja Turković, sustainable energy consultant, co-author of CIRSD regional sustainable energy study, Ankica Barbulov, director of GGE Serbia, who introduced ESCO service to Serbia and contributed most to popularization of PPP model in energy efficiency, Olivera Zurovac-Kuzman, OSCE National Environmental Affairs Officer (women in business, NGOs, entrepreneurs, members of academic community, women from media, women experts in development organizations, projects or programs). The networking with other women will provide them with additional support in order to be more powerful and their voice to be heard when influencing policies and shaping the developments.

WISE project will target in its first phase the creation and expansion of professional networks within the nexus gender-sustainable energy-climate change-environment in Serbia. In the next phase, the project will aim to replicate the methodology in other SEE countries and beyond.

Situation

Serbia is the first Energy Community Contracting Party to have transposed the Third Energy Package of the European Union, yet the full implementation has been lagging behind, in particular with regard to the unbundling of the transmission system operators in electricity and natural gas.

According to the Annual Implementation Report for 2017 published by the Energy Community, Serbia and Montenegro continue to be the leaders in implementation of the sustainability policies comprising energy efficiency, renewables, environment and climate.

However, the progress Serbia achieved during 2017 was modest. Serbia committed to a binding 27% target of energy from renewable sources in gross final energy consumption in 2020 compared with 21,2% in 2009. The country is at risk of not meeting the 27% renewable energy target in 2020 as the trajectory becomes steeper in the next years. Energy Community has recommended to Serbia to consider revising its NREAP as well as introducing new measures (auctions) in order to ensure it is on track to meet the 2020 renewable energy target. The 3rd Energy Efficiency Action Plan (EEAP) reported savings of 4.4% achieved between 2010 and 2015 out of the 9% energy savings target to be achieved in 2018. Serbia has achieved a high level of implementation of the energy efficiency acquis. However, efforts must continue to achieve full implementation.

As regards the Large Combustion Plants and Industrial Emissions Directives, Serbia should speed up its efforts on preparing for the practical implementation of the Directives, in particular adopting the NERP (National Emission Reduction Plan). The speeding-up of the adoption of climate change legislation – currently still in the draft phase - and the finalization of the National Climate Change Strategy represent the two key priorities for Serbia in the upcoming period.

Progress in all the above activities would be accelerated through a higher participation of women in concrete energy projects and applicable policy-making.

Strategy

WISE strategy responds to the main problems in the sector – in the first phase of the project we combine the research, networking opportunities for women professionals actively engaged in sustainable energy, climate change and environmental protection and organization of an event to present the WISE network and research results.

First, a state of knowledge on the gender – sustainable energy – climate change - environment nexus must be assessed, since so far no comprehensive research nor gender - segregated data exist in Serbia. The research has been conducted among professional women and women from general population (i.e., women in households). The results will be presented at the workshop scheduled for the end of March.

Second, professional women need to create networks that can be pulled each time some important decision is on the political agenda. This network would have an advocacy role in influencing energy policy decisions, but also a role of enhancing women professionals' solidarity and knowledge sharing. Membership would be open for all professionals: academics, practitioners, experts (consultants, researchers, technologists, and lawyers), CSOs activists and experts from international development organizations, women from media, business etc.

Third, the event will promote the research results and WISE network. Parallel to the event, WISE will organize a media campaign to draw the attention of stakeholders and public in general about the project, the network and the role of women in sustainable energy, climate change and environment.

Results and impact

The first phase of the project will be completed at the end of March. At that time the following results will be achieved:

- Women professionals working in sustainable energy sector, climate change and environment are targeted and networked in a formally established national WISE network;
- The first comprehensive research among women professionals and women in households is completed and the first gender-segregated data in sustainable energy, climate change and environmental protection in Serbia are obtained;
- Results of the research are presented in the form of a factsheet to all relevant stakeholders including key decision-makers and presented through a media campaign to citizens at large.

Challenges and lessons learned

During the project implementation, the project team has faced several challenges:

- Perception of certain percentage of women whom the project team approached that gender component necessarily means that the project is dealing with women as a vulnerable group and not with women who are professionally accomplished and results oriented.
- Limited capacity in ministries and institutions to provide gender data.
- Majority of women professionals see networking as good opportunity for them personally to grow, make new business opportunities and contribute to sustainable development in energy, climate change and environment.

Potential for replication

The challenges women face all over the world are in galvanizing transition to a more sustainable and smart energy future and meaningful climate change action require mobilization of all the stakeholders. Women, as disproportionately affected population must play a more prominent role in these activities.

The project has a strong replication potential in particular in the SEE region countries (since their sustainable energy agendas, aspiration and challenges faced are similar), in other Energy Community Contracting Parties (such as Moldova and Ukraine), and in Central Asia and Caucasus.

Some lessons learned could also be applied in Western part of the ECE region, in particular in countries where women's participation in professional activities that require strong STEM skills (STEM: science, technology, engineering and mathematics) have historically been relatively low.

Contact

Name: Branislava Jovičić

Organisation: Centre for Promotion of Sustainable Development (civil society organization)

Case Study // Round Table SDG 7: Transforming energy in support of the 2030 Agenda

Coal mine methane production at Karaganda coal basin to enhance mine safety and optimize economics: Drained CMM to power

Kazakhstan
Level: national

Summary

The main objectives include: test of industrial option of emission mitigation with a local mine methane power generation project that would provide direct mitigation of GHG emission and also may help to reduce load from the national electricity grid up to some extent; investigation of possible opportunities for replication of CMM-to-power practice and extension of emission reduction at the current level of coal production.

Situation

Coal mining is one of the key industries of Kazakhstan economy. Kazakhstan is considered in the first ten leaders by the volume of coal reserves and production after China, USA, Russia, Australia, India, South Africa and Ukraine. By the 2017 National Energy Report of Kazenergy Association 96,4 mln. t of coal were produced in the country in 2016 (<http://kazenergy.com/en/analytics/the-national-energy-report.html>). At the same time overall methane emission from coal production in Kazakhstan by National inventory reaches 1 bln.m3/a where one third (350 mln.m3/a) comes from deep mines in Karaganda region that produces around 11 mln.t of coal per annum.

Strategy

In order to maximize the value of generated CMM-based power and to minimize grid network connection cost, it was recommended that any power produced by such a project is supplied into the internal mine electrical system. In this case the value of power to the project does not seem to be the price of electricity sold but the saved cost of electricity supplied from the grid.

Results and impact

- 1.4 MW GE Jenbacher CHP generates electric power from CMM that is fed to the group substation of Lenina mine of Karaganda region and covers up to 20% of the mine power load;
- CMM-to power operation revealed a possibility to use waste heat of the CHP for the purpose of heating water for the mine needs and thus to provide additional mitigation of emission and coal consumption by the boiler house of the mine;

Challenges and lessons learned

Practical experience of the CHP operation revealed that at a certain point it is also possible to use most of the waste heat CHP for the purpose of heating water for the mine needs even in summer period and thus to provide additional mitigation of emission and coal consumption by the boiler house of the mine.

CMM power generation would increase a likelihood of export of the power to external consumers. Thus, as a part of commercial development phase the developing party should plan considering establishment of a separate local CMM-based power generation/distribution entity to manage technical and legal issues effectively.

Potential for replication

About 40MW of CMM potential is revealed at gas drainage of Karaganda coal mines by international experts over a pre-FS study that may be considered for further expansion of the CMM power practice in the region.

Contact

Name: **Evgeniy Alexeyev**

Organisation: **Methane Center, Kazakhstan**



SDG 11 : Sustainable cities and communities

Round table: Financing the transition to sustainable cities and communities: challenges and opportunities (1 March 2018, 15:00-16:30)

- Financing for renovating school buildings
Italy
- Rental housing finance for older persons
Czech Republic
- Achieving SDGs at city level through the Glasgow City Development Plan
Glasgow City Council
- A Flemish instrument for urban renewal projects with attention to environmental sustainability, climate neutrality and mobility
Belgium
- Fostering competition in small housing markets - innovative housing project in Montenegro
Samir Kulenovic Technical Advisor for Housing and Urban Develop
Council of Europe Development Bank

Round table: Promoting resilient and sustainable cities and human settlements (1 March 2018, 16:30-18:00)

- Implementing resilience in territorial policies
Potenza, Basilicata, Italy
- The KPIs for Smart Sustainable Cities and overcoming the data availability barrier in small cities
REC Caucasus
- Comprehensive Disaster Risk Management in Serbia - Law on Reconstruction following Natural and other Hazards
Serbia
- Hazard- risk vulnerability, impact assessment and establishing the first ever city level multi stakeholder Platform"
Bishkek, Kyrgyzstan
- An all of society approach in building resilience and addressing sustainable development
Russian Federation
- Nordic Sustainable Cities - Promoting solutions for sustainable, liveable and smart cities
Nordic Council of Ministers

Case Study // Round Table SDG 11: Financing the transition to sustainable cities and communities: challenges and opportunities

Renovating School Buildings

Italy

Levels: national and local

Summary

School buildings renovation is key to both for educational and cultural needs. Not only need to make them more secure (earthquake and flood risks) but also more suitable for modern education and make them a place for social life. The scarcity of public resources required to build a partnership with private individuals to make the best use of available resources.

Situation

More than 50,000 schools are present on the national territory. Over 8 thousand schools are located in buildings built at least 50 years ago, and 331 of these are found in the areas of the country where earthquakes are highly possible.

Strategy

As the property of the buildings belong to local authorities, the Central Government use a real estate investment fund to wrap up all the available resources for the renewal of the buildings or to build new schools paid exchanging the old ones to be used for different (commercial) purposes.

Results and impact

The project started in 2016. The first result of the pilot project are:

- N ° 6 Municipalities coordinated with a leader
- Institutional collaboration with: MIUR, Agenzia Demanio, ANCI / FPC, Local Authority Leader and INVIMIT
- N ° 6 new school complexes with energy class A and innovative services
- 23,000 square meters of regenerated schools
- 40,000 square meters of residential surfaces to be built or restored
- investments in schools amounting to 27 million
- investments in residential properties amounting to 41 million
- contribution of the Miur amounting to 6 million
- investments of the municipalities of 11 million (no cash but unused and unused properties)
- multiplier effect 1 to 6 of the resources invested by the municipalities (11 million invested generate an investment in the territory of 68 million euros)
- expected returns for Invimit equal to 3%+ inflation, for Municipalities about 1%
- 18 months (from the start of the Fund) to implement the new schools

- returns in social terms: employed on site, urban redevelopment, safety of schools and reduction of maintenance costs and utilities
- efficient allocation of public resources through the assessment of alternative scenarios taking into account risks and financial returns
- different balances: non-speculative financial remuneration for Invimit (and for any other investors), returns on the territory and new schools for the Municipalities, remuneration for private SGRs for the realization of the project

Challenges and lessons learned

The main challenge was to coordinate all the administrative work of the various municipalities that have adopted different ways of supporting the operation. Timetable has been modified to wait until all the Municipalities finished their activities; an extra work of 6 months compared to the initial forecast was needed.

The refurbishment of the schools should start in June.

Potential for replication

We built the operation in a way that other Municipalities may follow the model. In a way this pilot was necessary to test all the relevant aspect of the transaction and to prepare the way for other operations.

Contact

Name: Stefano Scalera

Organisation: Ministry of Economy and Finance

Case Study // Round Table SDG 11: Financing the transition to sustainable cities and communities: challenges and opportunities

Rental Housing Finance Support for Seniors

Czech Republic

Level: national and local

Summary

Improving the accessibility of housing for groups threatened with social and spatial exclusion must be addressed through the support not only on demand side (individual social benefits), but also on supply side of the housing market (social housing construction stimulation). The groups of households/persons threatened with social and spatial exclusion include senior citizens and families. The needs of persons who have problems with access to housing because of their age are also reflected in special demands on the construction and technical parameters of apartments. In view of these persons' limited sources of income, their ability to secure and maintain housing under standard conditions may be restricted. With the aim to increase the accessibility and affordability of housing for seniors, the Czech Government implements several subsidy programmes financed from the state budget and from the budget of the Stet Housing Development Fund, aimed at affordable rental housing in particular.

Situation

Although in terms of its size the Czech housing fund corresponds to the European average, it is rather obsolete and suffers from underinvestment. Together with the rising share of senior citizens in the Czech society, the need for flats modified to provide safe space for persons who are less independent is growing. This involves the removal of basic construction-related technical barriers. Expenditure on housing represents the greatest burden for low-income households, with single-parent households (typically single mothers) and other households made up of individuals (in particular senior citizens) threatened in particular. The greatest difficulty is experienced by households in large cities with higher rent levels. There are households with special needs in terms of housing resulting from their age (senior citizens) or state of health. These are in particular an urgent need for safety and the absence of threats that take on new importance in old age and can be thought of as one of the most important needs. At the same time fear of the potential loss of privacy and control over their own lives is emphasised. The basic ways in which the housing policy can help socially weaker groups of citizens, namely seniors, when addressing the question of housing are:

- Reducing the price of their housing (i.e. support for the construction of rental apartments, where the rent amount is, thanks to public support, under the market rate);
- Reducing the costs connected with housing in particular through improving the energy performance of buildings;
- Social transfers leading to increasing household income (social benefits for housing), which entails ensuring a balanced combination of their motivational and stabilisation functions. The goal is to enable households, under stipulated conditions, to use a flat that they could not normally afford with their income level (senior citizens or the handicapped), without this impacting the motivation to appropriately adapt their housing to their income levels.

Strategy

National housing policy in the Czech Republic is represented by the “Housing Concept of the Czech Republic up to 2020” approved by the Czech Government. The basic visions and strategic goals of this strategy are accessibility, stability and quality of housing, specified in the strategic goals:

- Ensuring adequate affordability in all forms of housing.
- Creating stable conditions in the spheres of finance, legislation and institutions for all participants in the housing market.
- Reducing the housing investment debt, including improvement of quality of the exterior environment in residential areas.



In every society, there are people who do not have the means to live on their own for various reasons. It is the obligation of the public sector to help them on the principle of solidarity, thus creating a stable environment within communities and society as a whole. Particular attention should be paid to people in vulnerable periods of life, such as senior citizens. At present, housing financial support is carried out by using resources from the state budget - through the Ministry of Regional Development, and from the State Housing Development Fund, whose financial sources are focused only on financial instruments - loans and guarantees, while direct subsidies (grants) are provided from the state budget. Several programmes are aimed at support for the removal of barriers in residential buildings (construction of elevators) and at new social rental housing construction for socially defined target groups. Programme “Home Care Flats” is aimed at construction of new rental affordable flats for older and disabled people, where additional social services are provided; “Community Seniors Homes” is aimed at creating housing units for seniors, disabled and socially disadvantaged groups having verifiably low incomes at the principle of neighbourly assistance. All these rental flats must be “adjustable” – i.e. they have to meet requirements for barrier-free accommodation, and all have regulated rents. There is also “general” support programme “Rental Housing Creation” for new housing rental construction – or renewal - in the form of low-interest loans available for public and private investors; with special attention to seniors and other vulnerable target groups. Programme “Barrier-free Residential Houses” is aimed at improving the existing housing stock by removing the barriers at the entrances, or building lifts equipped with adequate technical requirements for barrier-free use.

Results and impact

The purpose of the support of construction of social rental housing is to help people with difficult access to housing as a consequence of special needs based on their age, state of health or social circumstance in their lives. The programme has following grant titles: home care flats for people with special needs concerning housing due to health issues or advanced age, dwellings for people with no access to housing despite all existing tools of social and housing policy, while being able to live individually mainly in terms of fulfilling duties following from a rental relationship, and community senior homes for persons over 60 years to preserve and increase their self-sufficiency and independence, while allowing the community way of life on the principle of neighbourly assistance, with an emphasis on interpersonal relationships and maintaining personal independence of each individual.

Challenges and lessons learned

The main challenges consist in demographic changes comprising lower numbers of young families together with higher numbers of older-generation households. The aging of the population is an undisputable fact, while accessible housing is one of the basic interests of every individual; but the ability of the individual to secure his own housing through his own efforts falls as he gets older. Therefore, since 2000, with the assistance of budgetary aid from the Ministry of Regional Development and from the State Housing Development Fund, about 30,000 social rental dwellings have been built for social housing needs of selected diverse groups of socially disadvantaged or vulnerable citizens, seniors in particular. Up to the year 2010 these subsidies were available only to municipalities; since 2011 the state support has been extended also to other subjects, including private ones - legal entities, natural persons as entrepreneurs and non-profit organizations. According to the legal framework for the European Union Member States, this support has to fulfil the “state aid” limits; therefore, the highest possible amount is 500,00 EUR during the period of three years to one beneficiary (so called “de minimis” level). Such a limit is a barrier for larger investments in big Czech cities, as all the “de minimis” subsidies from all public providers cumulate.

Potential for replication

The system of state subsidy programmes is available for cities, NGOs, as well as private investors; it is therefore replicable for any public body – like regions or other countries.

Contact

Name: Daniela Grabmüllerová – Daniela.Grabmullerova@mmr.cz
Organisation: Ministry of Regional Development of the Czech Republic
www.mmr.cz

Case Study // Round Table SDG 11: Financing the transition to sustainable cities and communities: challenges and opportunities

The case for integrating the SDGs at international, national and local level with reference to the Government Strategy for Scotland and the development plan for the City of Glasgow.

Glasgow City Council

Levels: national, subnational and local

Summary

This case study looks at the newly published Government programme for Scotland 2017-18 ('A Nation with Ambition') and within this the work of City Planning in Glasgow. The degree of alignment with SDGs is considered between these levels of Government and the role of a UNECE Charter Centre in assisting this understanding is considered.

Situation

In the United Kingdom, development planning and housing policy together with regulation of the land market and the housing market is the responsibility of national government. However, the UK is a state where the implementation of the statutory and policy frameworks for planning and housing are devolved to the national parliaments of Scotland, Wales and Northern Ireland.

In Scotland, the Scottish Parliament legislates for planning and for housing, when necessary, judicial review of these systems takes place within the Scottish legal system. Points of law may be referred to the UK Supreme Court and, pending the outcome of the Brexit process, to the European Court of Justice.

The Scottish Parliament has enacted laws and prepares national (Scottish) policy that covers planning and housing. The spatial expression of these policies is contained within the [The National Planning Framework](#) and local authorities are required by law to prepare and approve a local development plan for their area. This must be accompanied by an Action Programme that expresses the delivery on the policies. [Glasgow City Development Plan](#) was adopted as the statutory planning document for the development in the City in March 2017. In December 2017, a new Bill was laid before Parliament ('The Planning (Scotland) Bill') that has the objective of furthering the ability of the planning system to deliver development change, to enable communities to be involved, and to promote the delivery of infrastructure. This work takes place within the Government's Programme for Scotland (currently A Nation with Ambition 2017-18) which acts as a national strategy for action.

In July 2015, the First Minister announced that the Scottish Government would adopt the SDGs, making Scotland one of the first nations to commit to the Goals. The Scottish Government's plans for implementing the SDGs in Scotland through the [National Performance Framework](#) and the [Scottish National Action Plan for Human Rights](#) (SNAP Plan). These commitments have been recognized by the UN.

The Scottish Government has mapped where action with the implementation of the SDGs will be prioritised in Scotland. This shows progress with outcomes for SDGs 1, 2, 3, 4, 5, 8, 10, 11, 13, 16 and 17. A link to download the Scottish Government paper is given at the end of this document.

Strategy

At present, there is no national nor local policy in Scotland expressly designed to implement the SDGs. However, in Scotland, in common with most advanced economies, has adopted most of not all of the aspirations of Agenda 2030 are already embraced by supra-national (i.e. European – EU), national, regional and local law and policy. The legislative system above, whilst not expressed specifically in terms of the SDG's, has some degree of alignment.

The principal issue concerns the extent of the degree of alignment in respect of the SDGs and those that are expressly under consideration at the Regional Forum in March 2018 namely:

- The financing of effective policies in pursuit (SDG 11.1)
- Policies and financial mechanisms in place to reduce the environmental footprint of cities including the improvement of air quality, waste management, sustainable transport and risk management associated with extreme weather events contingent on climate change – particularly storms and flooding (SDG 11.2, 11.5, 11.6)
- Strategies in pursuit of ICT including superfast fibre broadband (SDG 11.b), and
- integrated and participatory urban planning promote effective use of existing financial resources and PPPs to lever new sources of finance (11.3, 11.a).

In Scotland, the document that brings all of this together as a strategy and programme for action is the Scottish Government's annual programme, currently entitled [A Nation with Ambition 2017-18](#). This specifically sets out a range of actions and targets including the Scottish Government's commitment to meeting the UN Sustainable Development Goals and incorporate them into the work of government at every level. The section of most relevance to this case study is:

Building a fairer Scotland

Upholding the rights and values of an open, inclusive, diverse and progressive country through protecting the most vulnerable in society and tackling poverty as part of a fairer society. Empowering communities to take decisions locally with control of budgets more in the hands of local communities. Housing and homelessness – good quality, warm and affordable housing is a target to ensure a fair society for this and future generations and construction of social housing at a faster rate than any other part of the UK. Scotland has achieved much over the last few years in terms of community engagement and decision-making in the hands of communities. Scotland is an open and tolerant society, committed to respecting, protecting and implementing human rights and demonstrating equality, dignity and respect for all. Scottish public services are built on a 'rights based approach' through the UK Human Rights Act 1998 and the European Convention on Human Rights

This aspiration includes a number of specific targets including:

- Investment of £3 billion to deliver 50,000 affordable homes through a significant publicly funded investment in housing stock
- Introduction new energy efficiency standards for the private rented housing
- Increased action to tackle homelessness, rough sleeping and drug use by setting a clear national objective to eradicate rough sleeping
- A comprehensive review of local decision-making
- Implementation of the Land Reform (Scotland) Act 2016, including Land Rights and Responsibilities Statement and guidance on engaging communities in decisions relating to land

Results and impact

Please elaborate on the specific results. Preferably, summarise the results in bullet point

- The statutory plan for Glasgow contains a policy framework that can be successfully mapped to the SDGs (see diagram below)
- It is also the spatial expression for the delivery of, amongst other development priorities, the statutory [Glasgow Housing Strategy](#) which is in turn the framework for the [Strategic Housing Investment Plan](#).
- The City Development Plan and Housing Strategy are based on a ‘Housing Needs and Demands’ Assessment that covers all types of housing. This helps to identify what sort of development will need to be delivered.
- The existence of a UNECE Charter Centre as established at the Glasgow Urban Laboratory is a helpful mechanism to assist in monitoring and documenting the degree of alignment between the SDG goals, national strategy and local action at the city level.

Challenges and lessons learned

- Private sector delivery on housing has slowed ([Residential land supply monitor](#))
- The greater proportion of housing is delivered through strategic programming of Housing, where public finance instruments can stimulate action.
- Previously developed land has physical constraints that require significant understanding to minimise development funding deficits and delays in constructions, and establish how to target funding (e.g. Glasgow City Deal for Infrastructure delivery)
- Climate Change adaptation, especially in respect of managing flooding and drainage has become integral to the physical development of the significant parts of the City. ([Metropolitan Glasgow Strategic Drainage Plan](#)) This requires understanding of natural and ecosystem services to derive greater benefits. Nature based solutions and the development of natural capital accounting tools will be of importance in the future.
- Connectivity, both digital and physical movement between places, will shape future city forms and uses.

Potential for replication

- A solution designed for one jurisdiction and legal system may not be appropriate for different contexts. It is important to concentrate on principles.
- The principal lesson learned from the case of Scotland and Glasgow is one of alignment: alignment of principles at national and local level to help ensure a degree of consensus.
- The existence of a UNECE Charter Centre can assist government at national and local levels in examining alignment of SDG goals with national policy and local action.



Contact

Name: Brian Evans
 Organisation: The Glasgow Urban Laboratory
 Email: b.evans@gsa.ac.uk

Case Study // Round Table SDG 11: Financing the transition to sustainable cities and communities: challenges and opportunities

Urban renewal projects Flanders

Belgium (region Flanders)

Level: subnational

Summary

In 2002 the Flemish government launched the interdisciplinary instrument of the urban renewal projects. Through an annual call, cities can propose projects for which they can receive grants and professional support from experts from various policy domains. Sustainability in its various dimensions – social, ecological, economical – lies at the core of this instrument. Further particular attention must be given to climate neutrality, mobility, spatial quality and core compaction, family and child-friendliness, green-blue features, as well as balance between private and public spaces, coproduction with various urban actors, new forms of economy, energy and affordable housing.

Situation

Cities are facing several challenges dealing with hyper diversity, digitalisation, energy transition, the struggle for urban space, new collective arrangements, urban congestion, air quality. Urban renewal projects should have a leverage effect on the surrounding urban and other areas. The instrument – and the Flemish urban policy in general – acknowledges cities as the main place where societal challenges manifest themselves first and most concentrated. Therefore, the instrument advocates an innovative and sometimes experimental approach of modern-day urban challenges. The number of cities that can make an appeal to the instrument of the urban renewal project is limited, namely the 13 Flemish (biggest) central cities and –partially – Brussels, as well as 20 smaller cities that can be referred to as the provincial cities or towns. Together the central cities represent some 25 % of the Flemish population.

Strategy

The instrument of the urban renewal projects is more than just a financing instrument for the cities. Cities can participate in the annual call for projects by sending a proposal in which they describe the project's definition, the way it corresponds to urban challenges, the innovative character of the project and the way it functions as a lever for the larger urban area or the city as a whole, or as a potential example for other cities. Each year a jury, composed of academic and governmental experts, selects 3 or 4 projects. Throughout the whole process of realisation the cities receive guidance, input and recommendations from these experts (in the fields of architecture, urban and spatial planning, economics, housing, social inclusion, urbanism). There are approximately 9 million euros available for supporting urban renewal projects.

Besides the actual realisation of urban projects, the urban renewal instrument also entails a more conceptual part: conceptual grants are also allocated for projects aiming at developing innovative ideas and concepts that respond to modern day urban challenges.

Results and impact

- Before 2002, many inhabitants left the city. After 2002 this process has been reversed. Cities attract more people and because of new integrated investments Flemish cities have become more attractive and pleasant to live in.
- Throughout the whole process and support of the government cities have managed to increase their capacity in mastering and controlling urban projects (capacity building)

When it comes to sustainability and contributions to climate-friendly measures the following projects - among many others - deserve to be mentioned:

- Ostend: Stapstenen voor Stene (Stepping stones for Stene)
- Eeklo: Hartwijk (Hart District)
- Genk: La Biomista
- Antwerp: Nieuw Zuid (New South District)
- Ostend: Oosteroever (Eastern Bank)
- Sint-Niklaas: Lobbenstadmodel (City Lob Model)
- Antwerp: Scheldekaaien (Scheldt Wharf)
- Vilvoorde: Watersite
- Genk: Kolenspoor (Coal Trail)

Challenges and lessons learned

One has to try to find the right balance between realisations in the short-term, mid-term and long-term. It is not always easy to reconcile these different scales with the high ambitions cities cherish. Until recently, cities were obliged to engage in a process with private investors: a minimum amount of 30 % in the total project costs were to be carried by private partners. This obligation does not exist anymore. However cities are encouraged to involve private investors (as well as citizens and other urban actors or organisations).

Given the long duration, the high ambitions and the intertwining of the projects it is not always to keep the focus. However, the instalment of a quality chamber, which consists of the urban renewal projects' jury, has to guarantee that the projects live up to the original ambitions and standards set from the beginning.

Potential for replication

Until now, 61 projects have been selected (from 2002 onwards). Since the projects are rather large scale projects many of them are not finalised yet. The potential example that projects can have for other cities is one of the criteria by which the jury is guided by in the selection process.

Contact

Name: Stijn Van Wolputte

Organisation: Agency Internal Affairs, Urban Policy Department

Case Study // Round Table SDG 11: Financing the transition to sustainable cities and communities: challenges and opportunities

Fostering competition in small housing markets - innovative housing programme in Montenegro

Council of Europe Development Bank

Level: national

Summary

The primary objective of "1000+" affordable housing programme in Montenegro (MNE) was to provide access to permanent housing to low and medium income eligible households through a subsidised housing mortgage scheme; the households could not address their housing needs in the market. The programme also supported the effort by the MNE Government in the field of social housing and social integration of low-income persons in general.

The product of the Programme was affordable housing mortgages for the eligible beneficiaries who purchased newly constructed apartments from the selected construction companies. The CEB and MNE commercial banks co-financed the mortgages (50% and 45% respectively), the beneficiary participation was 5% down-payment, and the MNE government provided the interest rate subsidy. To date, the CEB participation in the programme is EUR 35 million.

The programme consists of three phases: 1st and 2nd phases were implemented between 2010-2012, and 2015-2017 periods respectively; the 3rd phase started at the beginning of 2018 and is foreseen to be implemented in the next two years.

Situation

MNE has relatively high housing needs for the low and middle-income population.

According to the latest 2011 census, MNE has 644,000 inhabitants and 316,000 housing units. Over 20% of the registered housing units are holiday homes for domestic and non-resident population, and the residential housing stock has 250,000 housing units. The effective housing stock per 1,000 inhabitants indicator is 388 (for comparison, EU average is 430, SEE 388, Turkey 250, Sweden 730). Projected housing needs are estimated in the "2011 to 2020 National Housing Strategy"; considering the demographic trends, the projected shortage of housing in 2020 will be in excess of 25,000 units.

On another hand, there was almost no supply of affordable and social housing stock in MNE over the last two decades. In 1991, 77% of MNE (then part of ex-Yugoslavia) housing stock was privately owned, and 23% was in possession of the Occupancy Right Holders. The latter was privatised through "give away" privatization model widely practiced in the region. This, combined with the post-socialism slow emergence of social and affordable housing systems, conflicts in ex-Yugoslavia in 90's, and economic crises in 2009, severely inhibited the supply of affordable and social housing stock.

As a response to the MHE housing needs, with the side objective to support the development of MNE affordable and social housing systems and thus social integration of low to medium income population, the CEB together with MNE stakeholders devised "1000 +" affordable housing programme.

Strategy

The programme's strategy consisted of its development and implementation; the key deliverables/activities are highlighted below:

1. Development of the programme:
 - Feasibility study and the programme's concept
 - National housing strategy and social housing law
 - Focus on low to medium income, young, and vulnerable population
 - Approval of the CEB loan
2. Programme implementation:
 - Programme's manual
 - Set-up of Programme Implementation Unit
 - Public calls and selection of ultimate beneficiaries, commercial banks, and apartments
 - Support to the eligible beneficiaries through the housing mortgage application process
 - Approval of the housing mortgages and beneficiary taking over of the purchased apartments

Results and impact

- Over 800 eligible low to medium income households purchased their flats through the project
- Competition among the commercial banks and construction companies; the mortgage interest rates and cost of real-estate reduced
- Re-mobilisation of construction industry post-2009 economic crisis and a positive knock-on effect on the banking sector
- Innovative IT platform and the programme's outreach and visibility
- Strengthened long-term social integration of low-income families, addressed through national housing strategy 2011-2020, and law on social housing

Challenges and lessons learned

Challenges:

- high mortgage insurance cost and 5% down-payment hindered the housing mortgage affordability
- still high interest rates for the housing mortgages comparing to the EU market
- real-estate transactions geographically concentrated on capital Podgorica
- the limited timing of beneficiary selection

Lessons learned and corrective measures taken into account in the 3rd phase of the programme:

- 5% down-payments is reduced to 3%, the maximum interest rate for the mortgages capped to 2.99%
- competition among insurance companies created
- off-capital available housing (second-hand apartments, individual houses) became eligible; this will geographically spread real-estate transactions and contribute to the housing mortgage affordability
- public calls for the selection of the beneficiaries will be time-opened until the full allocation of funds

Potential for replication

This model could be replicated in other location, providing careful consideration of the housing market, needs, and beneficiary categories.

Contact

Samir KULENOVIC, Technical Advisor for Housing and Urban Development

Council of Europe Development Bank, Directorate for Technical Assessment & Monitoring

Case Study // Round Table SDG 11: Promoting resilient and sustainable cities and human settlements: intersectoral cooperation and evidence-based policies

#weResilient: A local governance and accountability model for territorial and community resilience

Potenza, Basilicata, Italy

Levels: subnational and local

SDG addressed

As described hereafter, the case study refers to a global comprehensive policy-making strategy aimed at implementing **regional (wide-area social-economic) development** built on territorial/urban sustainability and safety. The outlining and implementation of the whole strategic process is performed by coordinating cities and municipalities (100 as for the Province of Potenza) with a regional and wide area vision and approach. For this reasons, due to the peculiarity of the territorial development policy-making strategy and to the strict interrelation existing among the SDGs, almost all of them are addressed, both directly and indirectly, as an integrated and comprehensive policy. For convenience, only the main SDGs directly addressed are listed hereafter:

Goal 11: Make cities inclusive, safe, resilient and sustainable

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8: Promote inclusive and sustainable economic growth, employment and decent work for all

Goal 13: Take urgent action to combat climate change and its impacts.

Summary

Capitalizing its best governance practices of the last decade, the Province of Potenza outlined the #weResilient strategy for pursuing **territorial development** through a structural combination of environmental sustainability, territorial safety and climate change contrasting policies.

In 2013 a milestone has for the strategy has been achieved: delivering to the community an important tool for guiding and addressing the provincial territorial governance, the Provincial Territorial Coordination Master Plan (TCP), that represents a "structural" tool for analyzing needs and driving local governments' choices with a "wide-area" development point of view.

The outlined strategy meets with an intuition: making Advocacy towards municipalities, relevant stakeholders, major groups and communities for implementing local development policies by integrating them with DRR and territorial and communities Resilience to disasters.

The strategic implementation path consists in both an urban planning coordination activity and in an "awareness-rising" action with a supportive and subsidiary process addressed mainly to municipalities and communities.

Situation

The Italian territory is largely characterized by all major natural hazards and related risks, whose potential impacts on communities reveal very serious in case of disaster. For this reason, risk reduction policies and actions to prevent disasters must be improved and governed at all institutional levels, in order to meet the basic need for public and private safety and to build on any kind of development.

The territory of the Province of Potenza (a Italian Local Authority of super-municipal and sub-regional level), made up of 100 small-sized municipalities, is exposed to natural and man-made risks that resulted in disasters with heavy losses in the recent and ancient history.

Below a brief description of the Province of Potenza compared to the rest of Italy. The Province of Potenza has been disadvantaged by its geology and morphology that has made difficult the construction and the maintenance of strategic infrastructures for a long time.

By the way, a change of trend is currently in place: since 2001 its income per capita (among the regions of the Italian South and Islands) is the highest after Abruzzo, Sardinia and Molise Regions.

The agricultural sector is still a mainstay of the provincial economy. The industry of the Province is based on small and medium-sized enterprises: they are specialized in food productions, in the production of artificial fibers and processing of non-metallic minerals. The construction (in 1993) of a FIAT automotive factory has opened new good economic prospects.

The Province is rich in hydrocarbons, particularly oil, in the Agri river valley, where the largest oil field in continental Europe is located.

It has an important environmental heritage, both naturalistic both historical-cultural: the Province hosts on its territory several protected areas, including two national parks (Pollino and Agri Valley), two regional parks (Gallipoli Cognato – Piccole Dolomiti Lucane and Vulture) and several natural reserves.

Regarding the territorial safety (including climate changes), the disasters that struck the provincial territory during the centuries and the new threats deriving from climate changes contributed to form a solid basis on which building a renovated community sensitivity and awareness.

The Province of Potenza is playing a coordinating role in a large area composed of 100 small and very small municipalities, through a complex action tending to the outlining/implementation of a useful governance strategy aimed at achieving a proper social-economic development with a wide-area vision and approach.

PROVINCE OF POTENZA

AREA: 6.500 sqkm

POPULATION: 378.000 inh

POP. DENSITY: 60 inh/sqkm

MUNICIPALITIES: 100

CAPITAL CITY: Potenza (67.000 inh)

Strategy

For #weResilient outlining and implementation, the Province of Potenza set-up a permanent Local Platform aimed at engaging Municipalities, institutions/authorities, stakeholders, major and social groups, communities and citizens in translating the strategy into concrete actions.

The strategy has accountability as an integral aspect. By networking with municipalities, relevant stakeholders and major groups, and also for monitoring the effectiveness of the whole action, the Province of Potenza is adopting a wider accountability system including, but going far beyond, the mere financial one.

One of the main aspects of the implemented accountability system is the knowledge acquisition and sharing. During the years, lot of work has been done - for example - in multi-hazard risks and disaster risk assessment. All the information produced and/or collected by other parties have been cataloged, elaborated for scenarios building, mapping and consultation purposes and provided for wide dissemination and public access even with open sourced IT tools.

Another fundamental component is the social accountability. In the Resilience implementation path performed so far, most of the efforts have been devoted to setting-up a complex system of progressive social involvement having the main purpose of entrusting and engaging social groups and citizen in the institutional policy-making regarding territorial and urban sustainable and resilient development. For reaching this goal, many actions have been launched and performed so far including:

- setting-up of “permanent platform” with major groups for discussing problems and possible solution to be adopted;
- setting-up of IT communication tools for providing wide evidence of the actions performed and the progresses made;
- organization and implementation of specific capacity building activities, mostly addressed to institutional actors but with the enlargement also to civil society representatives;
- implementation of specific awareness-raising and information campaign;
- co-working with NGOs, Civil Society Associations, volunteering and social groups for applying to dedicated financing programs, such as the Regional, National and EU programs;
- raising the support (not only financial) by the private sector, by means of specific engagement programs and initiatives;
- setting-up of processes of progressive confidence/trust building, outlined and calibrated on the specific and contingent needs of the different social components and on reciprocal cooperation and assistance.

Another fundamental aspect of the Strategy is the political and public accountability.

For reaching this goal, many actions have been launched and performed so far including the setting-up of a permanent network with all the municipalities and of a set of activities similar to those related to civil society but more politically and institutionally addressed.

Also in this case, the setting-up of processes of progressive confidence/trust building, outlined and calibrated on the specific and contingent features of the different political/public actors and on reciprocal cooperation and assistance complete the action.

Results and impact

#weResilient main achievements and results:

- Promoting comprehensive Resilience across the provincial territory, the Province of Potenza was declared a World Role Model for Inclusive Resilience and Territorial Safety by UNISDR
- Engaging local communities and indigenous culture in Resilience implementation, the Province of

Potenza was declared a Community Champion for Disaster Risk Reduction under the “Knowledge for Life” theme by UNISDR in IDDR2015

- Permanent networking with Cities, stakeholders and major groups for a comprehensive sustainable territorial development
- Performing supportive actions to Cities with a subsidiary and wide-area approach
- Performing programmes and actions for including communities and people in relevant institutional decision making processes, building capacities, developing capabilities, raising awareness, increasing political will and public support in local disaster risk reduction
- Building local to trans-national partnerships for sharing cooperation and best practices exchanges
- Contributing to implementing Local Government Self Assessments in all 100 Cities for measuring city-level and territorial resilience in a coordinated way
- Contributing to the finalization of the Sendai Framework for Disaster Risk Reduction 2015-30, the Agenda 2030 for Sustainable Development and the 2015 Paris Climate Agreement
- Producing a strategy and work programme to which all stakeholders and relevant key-actors agree and which effectively implement the TCP, the UNISDR’s ten essentials, the Sendai Framework for Disaster Risk Reduction 2015-30, the Agenda 2030 for Sustainable Development and the 2015 Paris Climate Agreement
- Working on different and multidisciplinary applications that help in transforming “words into actions”, so in implementing policies step-by-step

Challenges and lessons learned

Challenges encountered	Lessons learned (on which building on progresses)
Low Public support – Political will	Act on a “structural” channel: Land-Use and Government Policy Coordination
Some problems in the dialogue with and within stakeholders	Engage/Involve
Small-sized Municipalities	Provide Support/Cooperation
Urban structure unfit to cope with Disasters and Climate Changes injuries	Entrust/Empower and facilitate dialogues with stakeholders
High urban and Communities sprawl	Build partnerships/share experiences
Resources	Attract Private Business: PPP/PPPP
Skills and capacities	Engage Civil Society in Decision Making
Community engagement in Decision Making	Enhance capacities
Public Awareness	Enhance Public awareness

Potential for replication

Although the regulation contexts and the framework on urban planning has different among different Countries and Regions, the experience can be exported for implementation elsewhere due to its methodological character and approach. In fact, in close connection with the various regulation contexts in the fields of land use and urban planning, civil protection and risk prevention, it is always possible to include in the planning instruments special sections about DRR and resilience, providing a regional/local government with a coordination action over the urban territorial policy-making.

In the end, for the implementation are necessary only few 'easy to be found things': a public Authority with a close and consolidated in time relationship with its communities, a shared vision, a bottom-up approach that can provide communities with ownership for following-up the action over time.

Contact

Name: Alessandro Attolico

Role: Executive Director of Territorial Planning, Environment and Civil Protection Dept. and Advocate of the UNISDR "Making Cities Resilient" global Campaign

Organisation: Province of Potenza Local Authority, Italy

Contacts: alessandro.attolico@provinciapotenza.it

Web: www.provincia.potenza.it

Twitter: <http://www.twitter.com/provpzresilient> - Facebook: <http://www.facebook.com/provpzresilient>

Case Study // Round Table SDG 11: Promoting resilient and sustainable cities and human settlements: intersectoral cooperation and evidence-based policies

Using the Key Performance Indicators for Smart Sustainable Cities to address the major development issues and implement the SDGs in the city of Goris, Armenia.

Armenia
Level: local

Summary

The case study will describe the approach of developing a smart sustainable city profile for the city of Goris, by using the Key Performance Indicators for Smart Sustainable Cities. The case study will show how the use of indicators and the development of the smart sustainable city profile for Goris was crucial to formulate policy recommendations, enable transparency, engage all relevant stakeholders and promote sustainable urban development in the city.

Situation

Goris is a medium-sized city in Armenia and is located in the southern province of Syunik. The city currently has 23,200 inhabitants and is the second-largest city in Syunik. It is considered one of the most important historical and cultural sites in Armenia and a favoured touristic destination

Goris is also interesting from an environmental point of view despite the fact it is quite prone to natural hazards, in particular to earthquakes and landslides.

The economy of the city is mainly based on light industry, and it is home to several food-processing plants. Other quite developed industrial sectors are those of electric energy, food, textile and sewing, aluminium and metal-plastic products, woodworking and stone processing, and electronics.

From the analysis of the Key Performance Indicators for Smart Sustainable Cities which supported the elaboration of a city profile for Goris the following situation was found.

Armenia was part of the former Soviet Union, whose dissolution in 1991 had serious consequences on the country's economy, because of its strong dependence on cooperation with other ex-Soviet republics especially Russian Federation. Armenia's economic reliance on remittances from abroad remained after its independence, due to the very large number of its working-age population living and working outside of the country. Armenia has also been greatly affected by the global financial crises in 2008-2009, which resulted in a dramatic increase in poverty. Rural regions were most affected, with about one third of the population living in poverty. Unemployment remains high, with general unemployment at 18%, including youth unemployment at 35 % (2014).

The potential for economic improvement is very high. However, capacity-building and awareness-raising concerning the opportunities provided by ICTs is needed.

In 2011 Goris was declared a touristic center and has the potential to become a transit zone between Armenia and Iran and contribute to the formation of the Great Silk Road touristic route."

From an environmental point of view, the city is very rich in natural resources and in spring water which is supplied from the mountains and is of good quality. Its main environmental issues refer to waste management, the insufficient number of green areas, natural hazard adaptation and mitigation, and

air quality. Concerning waste management, littering is a big issue, together with illegal waste dumping and burning. Air quality is not monitored in the city. This needs to be improved. Air quality monitoring stations should be built for at least the main cities in the country, because climate change adaptation is a priority for Armenia. The Government should help municipalities to limit their greenhouse gas emissions and improve energy efficiency in the residential sector.

Disaster risk reduction is a key priority for all levels of government in Armenia. Measures have been taken to address this issue and minimize the risk of environmental disasters and their impact, such as the development of policies for disaster risk reduction and the preparation of seismic hazard assessment maps. Goris is located in a risky seismic zone and is frequently subject to floods from the river Vararakn. Floods represent a permanent danger for Goris' inhabitants and its infrastructure, in particular during the rainy periods, and they affect the city's urban topography.

From a socio-cultural perspective Goris can improve by introducing more ICTs in schools, libraries and hospitals; the encouragement of adult education and professional skill building; the promotion of a healthier lifestyle; and the building of cultural and recreation facilities. The main issues in this area include insufficient maintenance of the current housing stock, safety and poverty.

Goris lacks a proper financial system. The budgetary capabilities of the municipality are highly restricted, with little room for manoeuvre.

Cooperation with international and public organizations is very strong. Many international donors and international financing institutions (IFIs) are already acquainted with the needs and possibilities of the city, and support diverse projects in Goris. Finding a common objective can facilitate the development of relevant projects and maximize synergies.

Strategy

Phase 1: The expert Workshop and the stakeholder consultation

The fact-finding mission to Yerevan, the capital of Armenia, and to Goris, was undertaken from 9 to 13 February 2015. It was organized by the UNECE, the State Urban Development Committee of Armenia, the city of Goris, the United Nations Development Programme of Armenia, and REC Caucasus. The mission included interviews with representatives of stakeholders, desk research, an expert workshop and a stakeholder consultation.

During the stakeholder consultation, the methodology of the preparation of the smart sustainable city profile, which is based on indicators, was presented and discussed. Further, an interactive discussion with national and local stakeholders was organized; the discussion allowed for the collection of information on data and perceptions related to the current situation of the city's environment, urban planning, energy-efficiency, and economic and social perspectives.

PHASE 2. EVALUATING CITIES' PERFORMANCES WITH Smart Sustainable Cities Indicators

The city's performance was evaluated using the Key Performance Indicators for Smart Sustainable City Indicators, developed by ITU, and UNECE in consultation with other stakeholders in 2015. The list includes 72 indicators which are grouped under the following structure:

- Pillars of sustainability: economy, environment, society and culture; and
- Thematic areas of indicators. Eighteen (18) major thematic areas including ICT, innovation, employment, Trade, productivity, physical infrastructure, energy, air and environmental quality, noise, biodiversity, education, health, culture, housing, safety and social inclusion.

The above-mentioned indicators have been used to develop the Smart Sustainable City Profile of Goris. The Profile helps the local authorities to understand the needs of the city in order to become “smarter” and more sustainable. The list of KPIs was finalized in 2017 under the initiative United for Smart Sustainable Cities (U4SSC) which includes 16 UN bodies and other partners.

Results and impact

The analysis of the city of Goris supported by the Key Performance Indicators and described and addressed in the Smart Sustainable City Profile for Goris produced the following impacts:

- It supported the city to assess its performance in the areas of environmental sustainability, economic and social development and culture;
- it supported the city to identify its strengths and weaknesses and set priorities for action;
- it enhanced cooperation among city stakeholders on urban development activities;
- It promoted the implementation of the SDGs and the New Urban Agenda at the local level;
- It increased the city’s visibility at the national and international level.

The development of the Smart Sustainable City Profile for Goris gave the following impacts:

- promotion of knowledge and best practice transfer concerning sustainable urban development;
- provided support to national and local authorities to develop policies on sustainable urban development;
- strengthening partnerships and cooperation between stakeholders and identified and developed smart financing mechanisms;
- the concept of smart cities extended to low- and medium-income economies;
- support in shaping strategic vision and planned action through collaborative effort and identification of the most efficient use of city resources.

We have produced the following 1) **Smart Sustainable Cities Profile for Goris**: the Profile is a study of the current situation of a city by using the above-mentioned KPIs. Profiles measure the city's performance against the Indicators. It furthermore provides recommendations for the city to implement, in order to improve its sustainable urban development. A city action plan could be developed by the local experts with the support of international experts when funds are available. Goris has become a member of United Smart Cities platform: the online platform, which can be found at <http://unitedsmartcities.com/>, provides a place where stakeholders can share expertise, good practices, and lessons learned, in relation to smart and sustainable urban development.

Challenges and lessons learned

The challenges identified during the elaboration of the City Profile and the collection of the data for the KPIs are as follows:

- One of the key challenges identified during the design of the Goris Smart City profile was lack of data in some particular areas, for example of some of environmental matters and indicators, due to which data on cities was not collected or updated.
- Diversification of collection practices according to the different city/country/region departments and offices;
- Lack of human and financial resources to maintain a good database or to collect data;
- Expertise, skills and information on which data to collect

To improve visibility of Goris city has lots of potential for becoming larger tourism destination, and not only within the country, but for the region and for tourists worldwide, especially from Iran, Russia and other countries.

Local economy can benefit from improved cooperation with the local university and support the establishment of science-based SMEs.

City could improve and regulate the street network, by building ropeways, elevators and paths, as well as change the roads in the city centre into pedestrian zones, so as to reduce transport noise and air pollution.

The vulnerability assessment of the city shows the urgent need to implement preventive measures to control floods and to develop awareness programmes for earthquakes. In particular:

Flood risk: research suggests carrying out preventive measures in the areas identified as flooded or flood-prone areas, such as cleaning the Vararakn riverbed and flood channels; eliminating blockages; cleaning the bed of the Schori Dzor river and strengthening its dam.

Potential for replication

The development of Smart Sustainable City Profile and the collection of the data for the KPIs ON Smart Sustainable Cities is replicable for the cities of Armenia, and in general, for the region. It gives a positive impetus for development of systematic, smart and well-planned approach in urban development, covering almost all important and vital priority areas which matter for the future prosperity, healthy and environmentally friendly city, providing jobs, social care and technology solutions for its citizens. UNECE should continue working on Smart Sustainable City Profiles in Armenian cities, and also continue implementation of recommended measures through partnership with local stakeholders, municipalities, central government, civil society, banks and donor organizations.

Contact

Name: Ms. Nune Harutyunyan, Director, Regional Environmental Center for Caucasus
E-Mail: nune.harutyunyan@rec-caucasus.org

Case Study // Round Table SDG 11: Promoting resilient and sustainable cities and human settlements: intersectoral cooperation and evidence-based policies

From response to resilience: Disaster Risk Management in Serbia

The Republic of Serbia

Levels: local, subnational and national

Summary

The objective of the case study is to highlight the importance of developing local and national strategies and policies focused on preventive activities and risk-informed planning and investments.

In 2014, Serbia suffered the most severe flood in 120 years, with unprecedented human, financial and environmental losses. Serbia reacted by establishing the Office for Assistance and Recovery of Flooded Areas, initially entrusted with the recovery of flood affected areas. It then adopted the “Lex Specialis” Law on the Post-Flood Rehabilitation in the Republic of Serbia. In 2015, it signed an agreement for participation in the EU Civil Protection Mechanism. Going forward, the Disaster Risk and Crisis Management Law is under preparation.

These actions reflect the country’s will to move from a strategy of responding to emergencies, to one of fostering resilience and preparedness, as a condition for sustainability, with the full involvement of all stakeholders at, especially at community and municipal levels.

Situation

The territory of Serbia is highly vulnerable to various types of natural hazards, most notably floods. In May 2014, Serbia suffered the most severe flooding in 120 years. The disaster affected 22% of the total population and was estimated to have cost 4.8% of Serbia’s GDP. By way of illustration of the impact of the floods, it caused the Serbian economy to contract by 1.8% in 2014, in contrast with a projected growth of 0.5%. Additionally, 30% of the country’s is at risk from landslides. The Average Annual Loss (AAL) from droughts alone is estimated at 1.4% of the country’s GDP.

Strategy

With two disasters in different seasons of the same year, 2014, and obvious signs of climate change over a period of years, it was clear that changes were necessary in Serbian institutional, strategic and legal framework regarding disaster risk management. Serbia needs to shift focus from being reactive, responding when disaster occurs, to being proactive, focused on preventive activities and risk-informed planning and investments.

The National Strategy for Protection and Rescue had been adopted in 2012, however it was not followed by an Action plan that would secure its implementation. Based on Strategy goals, lessons learned in 2014 floods and based on the Sendai 2015-2030 Framework, the Government adopted the National Disaster Risk Management Program in December 2014, as a comprehensive program for disaster resilience. This program aims to be an umbrella framework to coordinate and implement activities and channel funds related to reducing and managing risks in Serbia.

One of the main specific purposes of the Program is to build a national disaster risk management system with the necessary capacity and clear responsibilities to reduce the existing risks, to avoid the creation of future risks, and respond more efficiently to disasters. “Strike while the iron is hot” had been in mind

of the decision makers, as the disaster events provided the opportunity to improve and systematize disaster risk management in Serbia. Thanks to the Program, Serbia will advance the Disaster Risk Management agenda in the country by revisiting existing practices and introducing new approaches. The Program will support the government's efforts to better comply with the EU Acquis, notably the Water Framework Directive and the Flood Directive, Climate Change Directive related to adaptation to changing weather conditions, and the Civil Protection Directive. It will not only aim to foster solutions at local and/or national scale, but will also help strengthen the regional platforms for cooperation and river basin management necessary to manage water and floods in the trans-boundary river basins, of which Serbia controls only parts (Danube river, Sava, Drina, Tisza, etc.).

At the end of 2015, the National Assembly has passed the Law on Recovery Following Natural and Other Disasters that became a standard for any disasters that can strike the country. At the same time, the Office for Reconstruction and Flood Relief was transformed into The Public Investment Management Office. Having completed the reconstruction after the 2014 floods, the Flood Relief Office was transformed from an ad hoc body into a permanent one with broader competences.

The Action plan for implementation of National DRM Program for period 2017-2020 was adopted by the Government in March 2017. The preparation of the Action plan was coordinated by the Public Investment Management Office (PIMO) with participation of all line ministries, special organisations, local self-governments, NGO's, and other stakeholders in the country. Along with the Action plan, Disaster Risk Financing Program has also been adopted.

Two years after the disaster, Serbia has a consensus-based plan detailing measures, expected results and activities to prepare for, respond to and recover from disasters resulting from natural and man-made hazards.

Serbia plans to have a comprehensive disaster risk management system in place by 2020, meaning that a solid inter-institutional coordination system is established, resilient to disasters caused by natural and man-made hazards. The action plan will be inclusive, gendered, and will address the needs, people with disabilities and vulnerable groups such as children and the elderly. The components are set in line with the four priorities of the Sendai Framework for Disaster Risk Reduction 2015-2030.

Going forward, a Draft Law on Disaster Risk Reduction and Crisis Management has been developed, based on international standards, the Sendai Framework and the experience that Serbian institutions had gained in severe disasters of 2014. After a comprehensive discussion among all stakeholders and public hearings completed in December 2017, the Law on DRR is expected to be entered into the agenda of the 2018 National Assembly spring session.

Results and impacts

- Recovery process incorporated the "Build back better" component.
- New strategic, legal and institutional framework
- Stronger cooperation among government institutions
- Stronger cooperation among different levels of governance (national, subnational and local)
- All new investments to be risk informed, based on 2014 floods indicators.

Challenges and lessons learned

Efficient disaster risk management is based on partnership. Partnership among national institutions, agencies, local self-governments, NGOs, private sector, academic institutions and communities. Disaster risk management cannot be the job for government only. For the system to be efficient, the whole society needs to be involved and have a role of its own. Coordination and collaboration is a challenge not only in Serbia but world-wide. Investing in resilience stays at the top of development agenda for the years to come.

Potential for replication

This experience, lessons learned and changes made in Serbian system could be replicable in other locations similar hazards.

Contact

Name: Sandra Nedeljkovic

Organisation: Public Investment Management Office

Case Study // Round Table SDG 11: Promoting resilient and sustainable cities and human settlements: intersectoral cooperation and evidence-based policies

Resilient cities

The Kyrgyz Republic

Levels: subnational and local

Summary

In 2015, the city recorded three major emergencies associated with natural hazards: in the winter due to severe frosts ice congestion occurred on the river Ala-Archa, with the threat of flooding large areas; in spring the city was partly flooded due to heavy rainfall and mudflow in Manka-Jar valley; and in summer the city has lived through the destructively strong wind (27 m/s).

The consequences of these emergencies were different in nature: measures taken to remove ice jams helped avoid flooding. However, heavy rainfall in spring resulted in flooding of buildings in residential area Archa-Beshik. The strong winds in summer damaged 54 houses, as well as substantial destruction of power supply systems. The advanced alert by the Ministry of Emergency Situations and Hydromet were helpful for preparing for these emergencies.

Thus, the objective of the case study is to investigate the disaster preparedness system in Bishkek city, reveal challenges in providing appropriate disaster prevention measures and steps, develop practical recommendations to improve the disaster preparedness system in Bishkek city.

Situation

Bishkek is the capital and largest city of the Kyrgyz Republic; it was founded in 1825 on the orders of the governor of Kokand - Madali Khan. The population is 901,700 people; the city is divided into four administrative districts. The town is located in the north of the republic, in the central part of the Chu valley, at the foothills of Kyrgyz ridge. This area is characterized by high seismic activity, and a variety of geological conditions: tectonic faults are in the close vicinity of the city, which increases the scale of effect of earthquakes on the surface, in the territory of the city. The fault zone is as a rule represented by fragmented produce of tectogenesis with unfavorable seismic characteristics; in strong earthquakes residual seismic deformation is common in such zones, resulting in amplified seismic effect on the surface. These conditions are important factors in the development of the Bishkek urban area taking into account important technical parameters of the soils to mitigate possible natural and man-made hazards.

The city is located in a high seismic risk zone in the immediate vicinity or is its placement/position of the city, there are tectonic faults, with strong potential of earthquakes in the city.

In addition, due to the nature of the geological structure and geographical location, there is a danger of floods, rise of groundwater table, risk of landslides, strong winds, as well as the risk of various man-made accidents at industrial sites of the city.

In 2015, the city recorded three major emergencies associated with natural hazards: in the winter due to severe frosts ice congestion occurred on the river Ala-Archa, with the threat of flooding large areas; in spring the city was partly flooded due to heavy rainfall and mudflow in Manka-Jar valley; and in summer the city has lived through the destructively strong wind (27 m/s).

Strategy

The LGSAT based assessment was undertaken in order to reveal shortages and gaps, affecting preparedness to disasters and resilience in Bishkek and develop the action plan for resilience.

Results and impact

The LGSAT assessment provided the basis for a plan of actions for resilience that was developed by the team headed by vice-mayor of the city:

- The staff of all departments of local government should regularly receive training in DRR basics; a responsible person should be assigned for the task
- A Council for disaster risk reduction should be established at the office of Mayor; members of the Council should receive comprehensive training in DRR. The Council should include representatives of community groups, business sector, vulnerable groups
- The city budget should include a special item for DRR; the resources for this budget item should be allocated; extra-budgetary sources of funding for DRR should be sought and studied
- Local authorities should cooperate with local trade and industry associations, for developing mechanisms for ensuring uninterrupted functioning of members of associations during and after disasters
- Systems of periodic assessment of risk should be established specifically for vulnerable sectors of development; all development decisions should be based on risk information
- The practice of informing the population on developing threats and risk tendencies should be continued and expanded, including the systems of early warning
- Risk maps for Bishkek should be prepared and periodically updated; the risk information should be taken into account in construction of housing and infrastructure
- Modern technologies and technical means should be used, for protection of key infrastructure and public facilities; the required financial resources should be secured

Challenges and lessons learned

The LGSAT based assessment revealed shortages and gaps, affecting preparedness to disasters and resilience in Bishkek. The assessment indicated the following:

- The process of planning of city development does not involve the social sector
- The city budget does not foresee resources for DRR; funding is provided only for post –disaster early recovery works
- City population does not practice insurance for disasters
- The existing and forecasted hazards and risk are taken into account only in the construction of apartment blocks by the government? By the government and by private developers . Individual (private) construction often violate construction norms and standards. Disaster risk is not taken into account in communications and transport sectors.
- There are no unified standards and methods for regular risk assessment
- Regular training for actions in emergencies are organized but are of desktop character. Community leaders and the business sector managers are not involved in the training
- Development and construction planning pay attention to environment protection; however, the intensive construction has led to destruction of the city irrigation network

The main issues in reducing the risk of disasters in the city are identified as the lack of technical equipment of the specialized services of the city and the lack of funding for disaster preparedness, according to the risk assessment conducted in summer 2015.

Potential for replication

Bishkek city's experience of developing the city resilience may be replicable within steps and measures in infrastructural spheres of the city, e.g. transport, communication, construction, activity of social entities, security, water supply, environment protection, etc.

Contact

Name: Mr. Albek Ibraimov, Mayor

Organisation: Bishkek city Municipality, e-mail: bishkek.int@gmail.com

Case Study // Round Table SDG 11: Promoting resilient and sustainable cities and human settlements: intersectoral cooperation and evidence-based policies

Sustainability of urbanized areas

Russian Federation

Levels: national, subnational and local

Summary

The sustainability of urbanized areas includes the study of issues: analysis, assessment and forecast of the risks of natural and man-made disasters; assessment and forecast of the vulnerability of the population, urbanized areas and objects of the technosphere; assessment and development of solutions to the disaster management capacity. The study includes the development of methodology, models and methods for constructing an integral indicator of sustainability based on the above assessments, as well as computational models based on statistical information on disasters, which allows developing effective management decisions to protect the population and urbanized areas from natural and man-made threats.

Situation

The Unified State System for Preventing and Eliminating Emergency Situations (EU) operates at the federal, interregional, regional, municipal and facility levels in Russian Federation.

The unified system includes (at all levels):

monitoring and forecasting systems (the National Crisis Management Center, regional Crisis Management Center centers, unified dispatch emergency services in municipalities);

public information and warning systems - a single service system - 112 has been set up, emergency public warning systems, tsunami warning systems, warning and information systems on transport, etc .;

The hardware and software complex "Safe City" is being introduced in the cities in Russia, (while in cities participating in the World Cup in football and also for some Arctic cities);

A software complex of dynamic risk analysis (PC DAR) has been implemented, which has statistics on all emergency situations since 1992 for all municipalities in the country - a database on disaster risks has been generated and continuously updated in the DAR PC. It is realized in the National Crisis Management Center.

All municipalities have constantly updated the safety data sheets of the territories and action plans in case of emergency. The United Nations Global Campaign to Enhance the Stability of Cities is being implemented in the Russian Federation "My city is getting ready" since 2016 in Russian Federation.

Six Russian cities have joined the UN campaign (Kazan, Naberezhnye Chelny, Almet'yevsk, Derbent, Kaspisk, Buinaksk).

In the future, it is planned to bring to 100 cities of campaign participants in 2018, combining the tools of the Campaign "My City Is Preparing" with the APC "Safe City".

The main document regulating urban planning is the town-planning code of the Russian Federation. Territorial planning, development planning of territories, territorial zoning taking into account risks of natural and technogenic character at the national, subject and local levels.

Out of all emergency situations, more than 88% are local and municipal emergency situations. Of 2673 emergency situations of the period 2009-2016 under review in the Russian Federation. A significant part (88.7%) died as a result of man-caused emergencies, the share of deaths in natural disasters was 5.3%, and in biologic-social emergencies - 2.6%.

Strategy

The approach to the formation of an integrated risk index is being developed at the level of a pilot entity (Krasnodar Territory)

The methodology of constructing an integral risk index based on a set of indicators reflecting: natural and man-made hazards, vulnerability (population, facilities and territories), counteraction potential (forces and means of prevention, response and emergency response, and engineering protection of territories from natural hazards processes).

The aim of the work is to collect, analyze, systemize, use and provide open access to information on the risk of emergencies for the subjects of the Russian Federation and municipalities.

Results and impact

- About the campaign "My city is getting ready": A series of training seminars on the implementation of the toolkit of the UN Global Campaign "My City Is Preparing" were held with the deputies of city administrations and with the chairmen of the municipal emergency commissions. Translated into Russian and adapted to the Russian realities the toolkit of the UN global campaign "My city is getting ready".. The site "Sendai-Russia" was created to reflect news on implementation of the Sendai program in the Russian Federation. www.srpsrb.org.
- All-Russian congress of rectors and heads of profile departments of Russian universities will held on the implementation of the Sendai Framework Program, the global campaign "My City Is Being Prepared" and the Global Initiative "Millions of Safe Schools" (February 20-21, 2018 year, 400 participants).
- Work continued on the development of Single duty dispatch service of the EDDU municipalities in the Russian Federation. At the expense of budgetary funds of subjects and municipalities, 2,293 EDDS of municipal entities were created.
Practical construction of pilot segments of the AIC "Safe City" was launched in Sverdlovsk, Vologda, Arkhangelsk, Astrakhan, Kursk regions and the Republic of Karelia.
In total, the Russian Federation has developed safety data sheets for 2,754 out of 2,788 municipalities, which is 99%.
The safety certificates of the subjects of the Russian Federation have been developed in all constituent entities of the Russian Federation.
On the territory of the Russian Federation there are more than 10,000 potentially dangerous objects.

Challenges and lessons learned

1. Questions and problems on PC DAR: The disadvantage is the lack of the ability to manage risks, we have only a database and calculations of individual risk for statistical events that took place. Therefore, a tool was needed to take into account the three components of the risk index: hazards, vulnerability and the potential for counteraction.
2. On the implementation of the Campaign "My City Is Preparing": there are some organizational and motivational difficulties in using the Campaign's tools and entering the Campaign "My City Is Being Prepared" of Russian cities. So far, only 6 cities have joined.
3. Software for the "Remote Risk Assessment" software package: - still the initial stage of work, calibration of models is required, approbation at a number of other regions of the Russian Federation.

Potential for replication

1. APK "Safe City" is intended for use in various cities of both the Russian Federation and the CIS countries in conditions of adaptation and observance of intellectual property rights
2. The methodology and methodology of the Dynamic Risk Analysis Program Complex can be used after adaptation to the national specifics of other countries while respecting intellectual property rights. Similarly, regarding the software package Remote Risk Assessment.

Contact

Name: Elena Arefyeva

Organisation:

All-Russian Scientific Research Institute of Civil Defence and Emergency Management

EMERCOM of Russia

Doctor of engineering science, Chief Researcher, vniigochs@vniigochs.ru

Case Study // Round Table SDG 11: Promoting resilient and sustainable cities and human settlements: intersectoral cooperation and evidence-based policies

Nordic Sustainable Cities – Promoting solutions for sustainable, liveable and smart cities

Nordic Council of Ministers

Levels: national and local

Summary

The rapid pace of urbanisation affects millions of people around the globe, posing challenges for health, safety and the environment. It also creates a growing global demand for solutions for the urban environment. The Nordic countries (Sweden, Iceland, Norway, Finland and Denmark) can offer high quality urban solutions based on joint strengths such as good governance, public-private partnerships, design tradition, environmental and social consciousness as well as robust technological solutions. This has been the base of the initiative ‘Nordic Sustainable Cities’, one of six flagship projects within the programme “Nordic Solutions to Global Challenges”, launched by the Nordic Prime Ministers in 2017, aiming to promote sustainability and progress towards the SDGs in a global context.

As the Nordic urban model is founded on the values of environment, equality, openness and efficiency, the initiative contributes to spreading Nordic approaches to good and sustainable urban development across the world, thereby contributing to the implementation of SDG11.

The project ‘Nordic Sustainable Cities’ consists of a number of activities aimed at promoting Nordic solutions for sustainable, liveable and smart cities on a global level. The goal is to share policy experiences, technical know-how and Nordic tools with interested international partners, while at the same time strengthening export opportunities for those Nordic businesses, which are able to provide solutions that promote sustainability in urban development.

The Prime Ministers’ Initiative “Nordic Solutions to Global Challenges” is headed and co-ordinated by the Nordic Council of Ministers, the formal co-operation organisation of the Nordic governments (located in Copenhagen, Denmark). The project ‘Nordic Sustainable Cities’ is led by Nordic Innovation (located in Oslo, Norway).

Situation

The Nordic region is home to some of the world’s most sustainable and resilient cities. The whitepaper on Sustainable Cities published by Nordregio, as part of the ‘Nordic Sustainable Cities’ initiative, has defined nine different components of inclusive, safe and sustainable cities – accompanied by good practices and relevant case examples from the entire Nordic Region, that can be spread and scaled-up globally.

Strategy

The strategy of the Nordic Sustainable Cities project is to promote Nordic practices and solutions for challenges facing cities globally. The project has three main components:

- 1) Create awareness of existing Nordic solutions
- 2) Build a joint Nordic export platform
- 3) Establish political partnerships and networks

The project provides funding to activities that promote Nordic solutions for sustainable, smart and liveable cities to relevant stakeholders outside the Nordic Region. The 'Nordic Sustainable Cities' project therefore takes shape of a multi-case project, partnering with stakeholders from different cities outside the Nordic region. More specifically, partnerships are being explored with cities in North America, China and India.

Results and impact

The overall impact of the 'Nordic Sustainable Cities' project is to stimulate the uptake of Nordic urban solutions globally, thereby addressing challenges facing cities in reaching SDG11. The project has produced a whitepaper that gives insight into practices and solutions of Nordic cities for creating sustainable urban futures. The paper is titled *What makes a sustainable city?*, and provides examples of the 1) inclusive city, 2) healthy city, 3) resilient city, 4) compact Green City, 5) mobility city, 6) low carbon city, 7) circular economy city, 8) smart city, and 9) design city.

As a multi-case project, the results and impacts of the Nordic Sustainable Cities projects are realised most concretely through the funding of activities in specific city-cases. A number of these are highlighted below (For a full list please visit the project website):

- Mumbai and Pune (India) and Beijing, Harbin and Wuhan (China): Information and branding of Nordic Waste to Energy Solutions followed by matchmaking sessions and pre-studies.
- City of Hamilton, Canada: Nordic Inspiration and Innovation for Affordable and Sustainable Housing through an Urban Lab in Hamilton, followed by setting up an open innovation challenges on affordable and sustainable housing.
- Panaji (India): India Urban Lab bringing together Nordic companies and experts with city officials, relevant companies and organisations in Panaji, a city in the Indian state of Goa. Panaji is part of the 100 Smart Cities program in India. The urban lab will be held in February 2018.
- Open Innovation Days (OID): Smart City Challenges for 100 Smart Cities program in India. Successful event concept from the Nordic region applied to five cities in India. The concept involves matching solution providers and customers, and will be held in spring 2018.

There is currently a new call for proposals promoting Nordic solutions for sustainable cities to stakeholders outside the Nordic region for a sum of NOK 1.5 million.

Challenges and lessons learned

As the project is still in the implementation phase, an evaluation of the activities has not yet been carried out. However, as the project involves a number of cases from different cities in the world, it will be a good opportunity to gather lessons learned of attempting to implement Nordic urban solutions outside the Nordic region.

Potential for replication

The aim of the 'Nordic Sustainable Cities' is to replicate Nordic urban solutions in relevant cities globally. Therefore the cases, described in more detail on the project website, offer inspiration for how to replicate solutions that address a variety of urban challenges. To strengthen the potential for

replication of the selected Nordic urban solutions, the whitepaper mentioned above (*What makes a sustainable city?*) highlights a number of examples that other cities might implement in a different context.

Contact

Name: Trine Schmidt (presenting at UNECE Regional Forum) / Hans Fridberg (Project Manager),
h.fridberg@nordicinnovation.org
Organisation: The Nordic Council of Ministers / Nordic Innovation

SDG 12: Responsible consumption and production

Round table: Successful approaches to delivering on Sustainable Consumption and Production by 2030 (1 March 2018, 15:00-16:30)

- Establish national SCP strategies and plans or include SCP in green economy policies
Romania
- SCP in the national policy landscape and multi-stakeholder participation
Sweden
- Green public procurement
Latvia
- Phosphorous recovery and reuse from wastewater and organic fractions
Switzerland
- International Center for Green Technology and Investment
Kazakhstan

Round table: Towards a circular economy: innovation for sustainable value chains
(1 March 2018, 16:30-18:00)

- National Strategy for the Circular Economy
Slovenia
- The International Green Deal North Sea Resources (NSRR) Roundabout
The Netherlands
- Food waste actions and interventions
Czech Republic:
- Approaches to Sustainable Production and Consumption in the national landscape
Republic of Moldova
- Sustainable agriculture and rural development Strategy
Montenegro
- Nordic Cooperation Project for green products (Nordsyn)
Nordic Council of Ministers
- Towards a Model of Circular Economy for Italy - Overview and Strategic Framework
Italy

Case Study // Round Table SDG 12: Successful approaches to delivering on Sustainable Consumption and Production by 2030

Mainstreaming sustainable consumption and production patterns into national policies to develop a Green Economy in Romania

Romania

Level: national

Summary

Romania has committed under the Batumi Initiative on Green Economy (BIG-E) to develop a National Action Plan on sustainable consumption and production (SCP). The first step included the development of an efficient institutional framework for sustainable development among all relevant public institutions and set up the coordination at the highest political level – Prime Minister Office; the mapping of existing policies and actions on SCP at national level; an effective input on relevant policies and strategies on SCP and green economy issues; and the engagement of relevant stakeholders on SCP.

The plan will be developed by national authorities with the engagement of relevant stakeholders in line with the objectives of the National Sustainable Development Strategy (NSDS), which is under review for the inclusion of the 2030 Agenda for Sustainable Development and its 17 SDGs and to set SDG priorities at national level. The National Action Plan on SCP will follow the revised NSDS and its implementation will be supervised by the Department for Sustainable Development at the level of Prime Minister Office. The objectives and actions will be targeted on specific ministries and institutions with close cooperation with private sector and other relevant stakeholders. The commitment will result in the eco-efficient management of resource consumption, the development of an attractive business environment, and the improvement of the quality of products and services. It will stimulate technological upgrade, encourage the renewal of processes and products, develop research and innovation activities and improve the capacity of both public authorities and companies.

Website: <http://www.greengrowthknowledge.org/big-e/romania-establish-national-sustainable-consumption-and-production-scp-strategies>

Situation

After the Batumi Environment for Europe Ministerial Conference (June 2016) the development of a national plan on SCP was discussed within the Inter-Ministerial Committee, which works under the Government Decision 741/2011, with all relevant institutions and stakeholders, followed by a process of mapping relevant strategies and policies on SCP, being part of the complete mapping on all 17 SDGs. One of the topics of discussions was the non-financial reporting of the large companies under Directive 2014/95/EU. Also, in 2016, the implementation of the Law on Green Public Procurement (adopted in April 2016) commenced and consultations with all stakeholders (public institutions and private companies) took place on establishing the criteria for auctions for developing a national plan on green public procurement (GPP).

After the change of Government in 2017, a dedicated structure was established at the level of the Prime Minister's Office: the Department for Sustainable Development under the coordination of a State

Counsellor reporting directly to the Prime Minister. Under this new coordination and in close cooperation with the Inter-Ministerial Committee lead by the Deputy Prime Minister, Minister of Environment, in September 2017, it was decided to revise the NSDS to include the 2030 Agenda and its SDGs together with the development of the Voluntary National Review (VNR) of Romania to be present at the High Level Political Forum in 2018, with SDG 12 being one of the goals under the review. The Inter-Ministerial Committee established an Open Working Group for drafting the VNR.

The core objectives are: the assessment of the consumption and production patterns for finding solutions to reduce the consumption of material resources and to decouple the dynamic of the gross domestic product (GDP) from the consumption of material and energy resources and its negative impact on the environment. Based on current NSDS (under review), the National Objective for 2020 is: *To decouple economic growth from environmental degradation by reversing the ratio between resource consumption and creation of value added; to move closer to the average performance levels of the EU in terms of SCP.* The National Objective for 2030 is: *To come close to the average level attained at that time by the other EU Member States in terms of SCP.* Estimates indicated that the application of adequate economic policy instruments could result in a 3–4 % annual increase in physical and energy resource productivity during the period 2008–2030. (A 2016 study by the Romanian Academy showed that the indicator *GDP/Domestic Material Consumption* has a negative trend on use of material resources in Romania for the period 2000–2007, whereas most EU countries recorded a significant positive trend, and for the period 2007–2014 Romania registered a slight increased trend on this indicator.)

Strategy

The approach to developing the National Action Plan on SCP was to identify the multi-layered nature of SCP among all policies, such as the development of the Strategy on Green Jobs (Ministry of Labour) having a direct impact on implementation of SCP practices in Romania. Other goals on mainstreaming SCP are to:

- Improve the capacity of public authorities to implement the legislation on GPP through clear commitments on eco-efficiency and environmental protection standards in all tender documents
- Expand gradually product labelling in accordance with EU norms to reflect the environmental performance of selling goods and services. We organized coherent information campaigns to inform consumers and to promote eco-efficient services and products, including those from organic farming
- Establish a diverse economic context in Romania by stimulating green investments in the context of promoting SCP, innovation, resource efficiency and energy efficiency
- Have close cooperation among and within various institutions, actors and clusters on SCP issues.

Results and impact

- **Implementation of GPP Law:** The Law on GPP provides for the development of a guide that includes minimum criteria for environmental protection for goods and services, the standard specifications and the need for a multi-annual action plan on GPP at the national level, with mandatory annual targets for green procurement for the public administration. The guide will be approved by a Joint Order by the Deputy Prime Minister, the Minister of Environment and the President of the National Agency for Public Procurement. It is in the final stage of the consultation process. The next step is to draft the National Action Plan on GPP, including specific annual targets for GPP. Complementing the actions on GPP, the Ministry of Environment is a beneficiary partner in the LIFE project GPPBest, in cooperation with Basilicata, Sardinia and Lazio Regions (Italy) and Ecosistemi Foundation. The project — best practice exchange and strategic tools for GPP — began in January 2015 and will end in June 2018. It represents a unique opportunity to learn more from the Italian partners in terms of GPP implementation and to share information regarding the environmental benefits of GPP in order to

improve our skills for policy planning. The main goal of the project (for Romania) is to support the Ministry of Environment of Romania in fulfilment of GPP commitments.

- **Non-Financial Reporting** for large companies: 24 companies submitted Non-Financial Reports under EU Directive 2014/95; there are also 70 reports on the sustainability of companies (CSR).
- **Eco-labelling** — implementation of the EU Regulation on the EU Ecolabel in Romania: the categories of products and services that have been awarded the European Ecolabel are interior paint, printed paper, absorbent paper, textiles, lubricants, detergents, soaps and tourist accommodation services. One of the objectives of NSDS was the development of product labelling according to their ecological performance. 79 products and 3 services were eco-labelled between 2009 and 2017 and 27 licences were granted. In 2017, there were 19 eco-labelled products (for the rest of the products there was no renewal of the application for the European Ecolabel following the expiry of its validity).
- **EMAS (EU Eco-Management and Audit Scheme)** — encouraging voluntary participation of organizations and economic operators in the frame of EMAS: from 2009 to 2017, 15 organizations were registered in EMAS, 10 of which were still registered in the EMAS National Registry in 2017. Four of the registered organizations have been discharged because of either non-compliance with the EMAS Regulation or requests from the organizations to reorganize their activities. One of the organizations has requested collective registration at the EU level.
- **Programmes financed from the Environment Fund** (under the coordination of the Ministry of Environment) that contribute to develop a green economy in Romania:
 - **“Rabla+” Programme** — to promote electric car purchase and development of electric infrastructure
 - The **Green House Programme** — launched in 2011 to improve air quality, water and soil by reducing pollution caused by the burning of wood and fossil fuels (used to produce heat and hot water) and encourage the use of clean, renewable energy sources
 - **Motor vehicles scrapping programme, “Rabla” (Jalopy) Programme** — National car fleet renewal programme — began in 2005 and has been implemented each year since. An eligible car had to be at least 12 years old in 2005–2008, 10 years old in 2009–2013 and 8 years old starting in 2014
 - The initiative of the Ministry of Agriculture and Rural Development and the Ministry of Environment to create a working group comprised of 20 national authorities, institutions and organizations to set up the National Action Plan to reduce food waste and develop the National Strategy for this goal.
- The Law on GPP aims to develop the internal market of green goods, services and works and encourages the development of clean and environmentally-friendly technologies. It promotes environmental protection, sustainable development and SCP and resource efficiency.
- Improvement of the capacity of both public authorities and companies, to implement the legislation on GPP and encourage the national and local public authorities to initiate, in cooperation with business associations, chambers of commerce and industry and universities, will also increase the level of social awareness and corporate responsibility regarding SCP.
- The achievement of the eco-efficient management of resource consumption will maximize resource efficiency by promoting a sustainable pattern of production and consumption.
- Increased resource efficiency will lead to a lower depletion rate of primary resources and thus reduce costs, improve competitiveness and achieve sustainable economic growth.
- Development of an attractive business environment that can enhance investment flows will stimulate technological upgrading and encourage continued renewal of processes and products. (In Romania, public procurement represents 20 % of GDP, compared with the EU average of 16 %.) The Romanian public administration can focus on choosing environmentally-friendly goods and services so reducing its impact, saving resources and contributing to the implementation of SDGs.
- The impact of products on the environment is considered throughout their life cycle, from design, manufacturing, assembly, marketing, distribution, sale and use down to recycling and disposal.

- Development of research and innovation activities will focus on the sectors where the expected effects are the most significant in terms of ecological progress and competitiveness: organic foodstuffs, water-management technology, energy efficiency, urban transport, construction, selective waste collection, recycling and disposal, biofuels, etc..

Challenges and lessons learned

- There is some progress in mainstreaming SCP in strategies and plans at the national level.
- Next, we will focus on approving the GPP criteria guide, develop the first National Action Plan on GPP and draft the National Action Plan on SCP as an operational tool of the reviewed NSDS.
- We must establish an integrated monitoring process to assess the progress made in the implementation of the adopted policy documents in order to provide regular feedback for revision of the ongoing actions and preparation of the new ones (e.g., establishing gradual targets for green procurements for public authorities, followed by the assessment of the impact on the environment).
- There would be the need to improve institutional cooperation and enhance engagement of the private sector and other relevant stakeholders.

Potential for replication

- Exchange of views and best practices on drafting the National Action Plan on SCP as follow up to the reviewed NSDS.
- Analysis of the opportunity to set up and launch a partnership for the implementation of transnational projects for food waste reduction.

Contact

- Mr. László Borbély, State Counsellor, Prime Minister's Office of the Romanian Government, Department for Sustainable Development
- Ms. Luminita Ghita, Head of Unit, Unit for Sustainable Development and Green Economy, Directorate of Green Economy, Climate Change and Sustainable Development, Ministry of Environment
luminita.ghita@mmediu.ro

Case Study // Round Table SDG 12: Successful approaches to delivering on Sustainable Consumption and Production by 2030

Sustainable consumption and production in the national policy landscape of Sweden

Sweden

Summary

In the context of the 2030 Agenda for Sustainable Development, Sweden's ambition for Sweden is to become a leader in the implementation of the Sustainable Development Goals, including goal No. 12 to ensure sustainable consumption and production patterns and sub-goal 12.1 on the implementation of the 10-Year Framework of Programmes. SCP is a key concept for Sweden, and has been addressed through a broad range of policies in the country (e.g. waste, energy, chemicals, food, housing, transport and urban planning, etc.), and multiple coordination mechanisms which support the design and implementation of integrated SCP policies at the national level.

Situation

Sweden follows an economic model of state and society that is often described as the 'Nordic model' and according to which social welfare and an inclusive and equitable society are among the central goals of public policies. High levels of human development and social progress in the national context however are coupled with relatively high levels of ecological impact per individual of the country, from the consumption perspective. The major challenge for Sweden remains how to manage a transition towards sustainable and equitable levels of domestic consumption and consequent resource use, in global terms.

Strategy

SCP is a key concept for Sweden, and has been addressed through a broad range of policies in the country (e.g. waste, energy, chemicals, food, housing, transport and urban planning, etc.). As part of its "Generation Goal", Sweden has set 16 Environmental Quality Objectives and 24 Milestone Targets to be achieved by 2020 (2050 in the case of the climate objective).

Moreover, a diverse range of relevant institutional and stakeholder coordination mechanisms are in place to ensure policy coordination and policy coherence. This includes:

- The national multi-stakeholder group to support and guide the implementation of the 10-Year Framework of Programmes in Sweden, chaired by the Swedish EPA: established in 2014, this multi-stakeholder group integrates representatives from the business, academia, the civil society sectors, as well as local authorities, trade unions, representatives of culture and youth.
- The inter-ministerial working group on sustainable consumption and production and resource efficiency, chaired by the Ministry of the Environment and Energy.

As an example of the policies being put in place, the “Strategy for Sustainable Consumption” was launched in 2016 by the government, with the objective of creating an enabling sustainability framework for individual consumers. The Ministry of Finance presented the strategy on behalf of the government in October 2016. As part of the strategy, which foresees strong cooperation with and among municipalities, the business sector and civil society, planned policy measures are presented under seven areas. Emphasis is put on consumption, the business sector, harmful chemicals and key sectors – food, transport and housing. For example:

The promotion of repair, reuse and the sharing economy: A reduction in the rates of value-added tax (VAT) from 25 per cent to 12 per cent for the repair of bicycles, shoes, leather goods, clothing and household linen, furthermore for the repair and maintenance of white goods carried out in the home as well was introduced in early 2017.

The National Forum on Environmentally Smart Consumption was created in the context of the Strategy for Sustainable Consumption by the Swedish Consumer Agency early 2017 with the objective to stimulate knowledge sharing between public national and regional authorities, representatives from business associations, academia, municipalities, counties and civil society.

Results and impact

According to recent evaluations of the Swedish implementation of 10YFP, there is an increasing awareness among Swedish stakeholders about the need to shift to sustainable consumption patterns. Annual national multi-stakeholder laboratories have been arranged in Stockholm (SEPA-2015), Gothenburg (City of Gothenburg-2016) and Umeå (City of Umeå-2017). Leading principles for 10YFP stakeholder cooperation has been: exchange of knowledge across disciplines, co-creation and innovative solutions. Evaluations show that new contacts and networks have been established between frontrunners in the transition to SCP on the local, national and regional level. The Swedish EPA is currently reviewing its 10YFP implementation strategy based on the evaluations and the national implementation of Agenda 2030.

The newly established National Forum on Environmentally Smart Consumption have arranged round-table discussions on food during 2017 and developed a digital venue, for all actor working with environmentally sustainable consumption, to be launched in March 2018. During 2018 the Forum will focus on textiles, food and home electronics and arrange seminars, round table discussions, podcast and webinars to exchange knowledge, develop the quality of co-operation and stimulate innovation.

Challenges and lessons learned

Major challenges for the upcoming years are to focus on effective cooperation across sectors and national borders as well as with the business community to ensure that sustainable solutions become

Potential for replication

The Nordic Council of Ministers working group on SCP have identified and reported Nordic Best Practices in the six areas focused in on-going UN 10YFP multi-stakeholder programmes; sustainable lifestyles, sustainable public procurements, sustainable tourism, consumer information, sustainable buildings and construction and sustainable food systems:

<http://norden.diva-portal.org/smash/record.jsf?pid=diva2%3A1177169&dswid=5150>

Contact

Name: Ms. Eva AHLNER

Organisation: Swedish Environmental Protection Agency

Case Study // Round Table SDG 12: Successful approaches to delivering on Sustainable Consumption and Production by 2030

Green Public Procurement

Latvia

Level: national

Summary

The regulatory instrument prepared by the Ministry of Environmental Protection and Regional Development – Cabinet of Ministers Regulation on Requirements for Green Public Procurement and Procedures for Application – came into force from 1st July 2017 and determines the requirements and criteria for green public procurement (GPP) and procedures for application. The purpose is to regulate GPP implementation, monitoring and assessment, by determining the product groups and services where application of GPP is mandatory (annex 1 of the regulation). At the same time, the regulation defines the GPP requirements and criteria for the groups of products, services and works where GPP application is voluntary (annex 2). In addition, annex 3 of the regulation defines the Methodology of Life Cycle Costs for Energy Consuming Products. To facilitate the application of regulatory framework, implementing guidelines for every product group and service has been elaborated.

Situation

In 2015, the Green Procurement Promotion Plan 2015–2017 was developed in Latvia, which aimed at contributing to sustainable consumption and production through increasing the proportion of green procurement, especially green public procurement. Since October 2014 in Latvia, application of green public procurement criteria is mandatory in the procurement of food supplies and catering services in state and local government institutions. The regulation extends the scope of mandatory application to an additional six product groups and services. Green procurement is the one of the implementation tools of the horizontal principle “sustainable development” applied to receive assistance from EU financial instruments.

Strategy

Development of mandatory green public procurement for specific product groups – copying and graphic paper, office IT equipment, office furniture, food and catering services, cleaning products and services, indoor lighting, street lighting and traffic signals, as well as several voluntary product groups like office buildings, road construction, transport, etc.

- Develop the “calculator” of life-cycle costs for energy consuming product groups, as well as “calculator” for construction life-cycle cost assessment;
- Develop implementation guidelines of green procurement and green public procurement for certain products and service groups, including core criteria in the procurement tenders;
- Prepare and submit to the Cabinet of Ministers annual reports on the implementation of green public procurement;
- Organize regular methodological workshops and training for operators and state and local government institutions on green procurement and its application in purchases;
- Implement awareness raising activities for stakeholders on green procurement and green public procurement.

Results and impact

Public procurement in Latvia accounts for 20% of GDP. In turn green public procurement in financial terms reached 19% from all public procurements in 2015, however decreased to 13-14% in 2016 and 2017. Statistics on green public procurement are collected annually by the Procurement Monitoring Bureau. The proportion of green public procurement is highly dependent on common procurement contracts for projects financed by EU financial instruments.

Challenges and lessons learned

There is still a perception among authorities that green public procurement is more expensive and complicated and introduction of “green” requirements and criteria will restrict the competition and could result in an appeal of the tender results.

The concept of “greening” of the procurement has to be already at the project planning phase. The addition of “green” requirements and criteria in a preparation of the procurement phase is difficult even impossible and will not correspond to the green procurement principles. The cooperation between project developers and procurement specialists is essential.

The adaptation of the green public procurement requirements and criteria for the product groups and services where is no agreed and scientifically justified criteria (i.e., European Union GPP criteria)

The application of verification and conformity check procedures.

Explanatory seminars and targeted training workshops provide an excellent opportunity, based on practical examples, to show the integration of green requirements and criteria in procurement documents and clarify the uncertainties on the application of the principles.

Potential for replication

We are confident that there is a potential for adaptation of the guidelines, life-cycle costs assessment tools and to introduce the legal obligation to apply green public procurement principles for selected groups of products, services and works.

Contact

Mr. Ugis Zanders, Ministry of Environmental Protection and Regional Development

Case Study // Round Table SDG 12: Successful approaches to delivering on Sustainable Consumption and Production by 2030

Delivering on sustainable consumption and production: Phosphorous recovery and reuse from wastewater streams and separated organic fractions

Switzerland

Level: national

Summary

Switzerland has committed under the Batumi Initiative on Green Economy (BIG-E) to promote phosphorous recovery and reuse from wastewater. Guided by environmental and development policy considerations during the revision of the Technical Ordinance on Waste, the Swiss Federal Council introduced environmental standards to promote phosphorous recovery and reuse. As a result, Switzerland is the world's first country with compulsory phosphorus recovery and reuse from sewage sludge and separated organic fractions. The new regulation entered into force in 2016 with a transition period of 10 years for related technological development and adaptation of the existing infrastructure. The commitment will ensure long-term food production, increase of the lifespan of phosphorous, and minimise the environmental impacts from phosphorous extraction and processing.

Website: <http://www.greengrowthknowledge.org/big-e/switzerland-promote-phosphorous-recovery-and-reuse-wastewater>

Situation

Phosphorus is essential for the functioning of biological organisms, cells, plants and animals, and one of the main components of fertilizers. It is an essential element for food security, but a limited one.

Each year, Switzerland imports more than 6000 tonnes of fertilizer products already processed. Switzerland relies on phosphorus imports to cover the fertilizer needs of agriculture: 100% of phosphate fertilizers consumed in Swiss agriculture is imported. However, imported phosphate fertilizers do not always comply with the legal limit values. Depending on their origin, they are contaminated to varying degrees by heavy metals such as uranium and, especially, cadmium.

In 2015, the Federal Office of Agriculture (FOAG) carried out a market survey, which showed that almost half of the fertilizers analysed exceeded the limit values for pollutants. Heavy metals accumulate in soils, with adverse consequences for health and the environment.

Strategy

Switzerland could cover its phosphorus needs with recycling fertilizers from sewage sludge and animal meal; it would thus play a pioneering role in Europe.

With the revision of the Technical Ordinance on Waste entered into force in 2016, phosphorus contained in wastewater, sewage sludge and ashes will have to be recovered as early as 2026 and subject to material recovery. The resulting nutrients can be used to produce recycling fertilizers.

This solution has three advantages:

- Firstly, it provides primary phosphate reserves;

- Secondly, it avoids the introduction into Switzerland of harmful heavy metals such as uranium and cadmium through fertilizer imports;
- Thirdly, it protects Swiss farmers against unforeseeable changes in phosphate prices.

From an ecological and economic point of view, it is therefore worthwhile to recycle phosphorus. This represents a major step towards sustainable management of raw materials and sends a strong signal to Europe. To recover phosphorus, different techniques exist. The same criteria apply to all.

Quality requirements assume that pollutants are removed from the phosphorus cycle. In addition, phosphorus recovery must be efficient and existing disposal infrastructures must be used. Finally, costs are another decisive factor in the success of a process. The FOEN has carried out a survey to evaluate the different processes that are ready to be placed on the market.

Results and impact

Expected impact:

- Ensuring food production in the long term;
- Increase of the lifespan of phosphorous (a finite natural resource);
- Minimization of the environmental impacts from phosphorous extraction and processing.

Challenges and lessons learned

In Switzerland, a market for recycling fertilizers still needs to be set up. To achieve this, different conditions must be met, such as the availability of mineral recycling fertilizers, price and demand. Agriculture must be able to use recycling fertilizers in all production sectors, whether intensive, extensive or organic. At a first step, the FOEN and the office for agriculture will examine and implement appropriate instruments to strengthen the competitiveness of mineral recycling fertilizers.

In collaboration with experts, the FOEN will write the “Phosphorus-rich waste” module for implementation assistance. Due to lack of data, a detailed economic study of phosphorus recycling is still lacking in Switzerland. Such a study will answer questions about the total costs that phosphorus recycling represents for society and its utility for the environment. To institute phosphorus recycling and to allow recycling fertilizers to gain a foothold in the market, it is necessary to involve all stakeholders and encourage them to regularly exchange their knowledge and experiences.

Potential for replication

Switzerland is ready to share its experience and approach by putting interested national experts in contact with Swiss experts. Closing the phosphorus cycle is an important aspect to ensure long term food security, and creating a regional/European market for recycled phosphorus can accelerate the transition towards green economy. Exchange of experiences with the Netherlands took place thanks to BIG-E.

Contact

Ms. Martine Rohn-Brossard, Federal Office for the Environment of Switzerland

Case Study // Round Table SDG 12: Successful approaches to delivering on Sustainable Consumption and Production by 2030

International Center for Green Technology and Investment

Kazakhstan

Level: national

Summary

Kazakhstan has committed under the Batumi Initiative on Green Economy (BIG-E) to establish an International Center for Green Technology and Investment in the period 2018–2019. The International Center is expected to cover seven main areas:

- Power sector transformation;
- Sustainable urban development;
- Green business development;
- Transfer and adaptation of green technologies and best practices;
- Development of green funding;
- Development of renewable energy sources;
- Capacity-building for green growth.

The Center will focus its activity on actions to implement the main areas, primarily in the countries of Central Asia (Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan and Turkmenistan), Iran, Afghanistan, Mongolia and Azerbaijan.

At the same time, the Center will cooperate with industrially developed countries (members of the Organization for Economic Cooperation and Development (OECD)), the European Union, the United States of America, the Russian Federation, China, India and the countries of Latin America.

The projects run by the Center will involve national holding structures and development institutions, international financial organizations, leading world and Kazakhstani universities and research centres, as well as non-government organizations.

Website: <http://www.greengrowthknowledge.org/big-e/kazakhstan-establish-international-center-green-technology-and-investment>

Situation

The Green Bridge Initiative, acknowledged at the United Nations Conference on Sustainable Development (RIO+20) in 2012, is a multilateral, cross-sectoral and voluntary Partnership Programme that aims at providing a stable and long-term basis for green investment, transfer of new technologies and innovations from developed countries to developing ones. Over six years, 16 countries and 16 NGOs have joined the Green Bridge Partnership Programme and about 60 agreements and memorandums have been concluded in the field of environmental protection, green economy and green technologies.

Future Energy EXPO 2017 demonstrated the economic and environmental feasibility of green technologies. The heritage of EXPO 2017 will be the International Center promoting green growth principles and standards envisaged in Kazakhstan's concept on transitioning to a green economy and will continue the Green Bridge Partnership Program.

Strategy

The International Center will be established as an information, education and capacity-building tool. The following economic sectors are expected to benefit from the activities of the Center: agriculture, forestry and fisheries, power engineering, mining, manufacturing, transport, water, waste management, tourism, housing and construction.

Results and impact

The International Center for Green Technologies and Investment will develop a register of best available technologies, issue expert opinions and/or recommendations for using green technology by actors working in the industrial innovation activities for further implementation of projects.

Maintenance of the register will be one of the measures to stimulate business towards transition to green economy, because it will allow for obtaining a comprehensive environmental permit, in line with permits used by users of natural resources in developed countries. In addition, it will enable to implement green projects, including by attracting investments from international development banks.

Challenges and lessons learned

By successfully achieving these targets, the country will recover its water and land resources by 2030, and its resource productivity will largely be on par with the average indicators of OECD members and other developed countries.

Potential for replication

As a follow up to EXPO-2017, the Center will focus on transferring green technologies, green financing, expertise, monitoring of projects, capacity building and training programmes. International organizations such as UNDP, UNECE, UNEP, OSCE and others have expressed their interest in cooperating on a non-exclusive basis, in areas of common interest related to the Center. Similar centers have been established in other countries (e.g., Japan, Poland, Jordan and Korea) and we want to create a similar center in Kazakhstan as a hub for Central Asia.

The Center aims to reinforce the cooperation among Central Asian countries in ensuring sustainable development with support of key international institutions and the private sector, which will allow for exchanging knowledge and technologies, and transferring them across Central Asia. At the same time, the Center cooperates with industrialized countries of OECD, European Union, United States, Russian Federation, China, India and others.

Contact

Ms. Aliya Shalabekova, Ministry of Energy

Case Study // Round Table SDG 12:

Towards a circular economy: innovation for sustainable value chains

Transition to a Green Economy: National Strategy and Process

Slovenia

Level: national

Summary

In October 2015 the Slovenian Government adopted **the Framework Programme for Transition to a Green Economy**. With that, the government set out the process for transition and a long-term vision of development and common orientation for policies and strategies towards a green and circular economy. The objective was to further the competitiveness of the economy, and at the same time improve the preservation of natural resources and increase the quality and safety of life. The process started with the first systematic steps in linking sectoral policies and measures that include government action in many areas, including: the sustainable management of resources (water, waste, physical space, protected natural areas, forests, wood, opportunities for greater social inclusion); the greening of the economy with a smart specialization strategy; the promotion of green jobs along with the skills and knowledge necessary; green public procurement; sustainable urban development and sustainable transport policy; and green farming practices. The implementation continues through the preparation of **The Road Map towards a Circular Economy in Slovenia**, and the establishing of the **Circular Economy Hub** for support to all stakeholders (both underway).

Situation

Numerous examples of best practices in this area in Slovenia have evolved through an appropriate combination of development, learning, experience, and innovation. So, we are not starting from scratch; there are numerous examples of good practices leading the way. This involves companies and organisations which, despite a lack of umbrella efforts, showed a high awareness of the social and economic benefits, used their own knowledge and support, and recognised how important and necessary it is to create new green jobs, to operate with green responsibility, and to offer people green products and services. Their experiences, their knowledge, and their stories are extremely valuable, and a learning point for all. As such an invaluable source and partner, we work together to find systemic solutions.

Strategy

The transition to a green and circular economy is a long-term process, which involves changes at many levels and within the whole society. The shift from linear to circular models is at the core. The approach chosen was to work with stakeholders, best practices, and people and companies. It is bottom-up, top-down, and horizontal cooperation at the same time, and represents experiential learning for improving policies. An active, structured, and continuous dialogue and involvement of key stakeholders is used for making the transition happen, as well as to find new efficient solutions.

To support the process and to encourage everyone to get actively involved as partners, investors, responsible citizens, or innovators with green knowledge and skills, the government also established the **Partnership for Green Economy of Slovenia**, led by the Office of the Prime Minister. The Partnership involves Slovenian governmental representatives and stakeholders from the commercial sector, the regional and local levels, academia, non-governmental organizations, and many others. Through the Partnership we are trying to encourage the transition in several ways: with the exchange of good practices, through awareness-raising and education, through international cooperation and exchange of knowledge, connecting different partners and supporting circular investment, etc. The process involves consultations, workshops, and cyclical meetings aimed at monitoring implementation of the measures laid out, as well as the achievement of targets, exchanges of opinions, defining priorities, and will also continue to evolve in future.

Results and impact

- Over 2,500 interested stakeholders involved in the Partnership
- Stakeholders mobilized – concrete proposals for policy improvements communicated and discussed directly with the government, some already underway for the implementation.
- Best practices identified – lessons shared with community of Partnership and interested public
- Circular economy included as a main stream of key development policies (Development Strategy of Slovenia, National Environmental Action Program, educational programs, etc.)
- Slovenia won the 2017 title as the first country in the world to become a green destination as a country;
- Cities as key circular enablers - capital Ljubljana won the title of European Green Capital 2016, and the City of Maribor is first in implementing the model of a circular city.
- The Government is bridging private and public sector – The Partnership for Green Economy is connecting more than 2,500 stakeholders, engaging and networking on national and international level. The results – new investments, new jobs, new mindset of a circular culture shared in Slovenia and in the region.
- The making of Slovenian Circular Economy Hub is joining Circular Economy, Social Entrepreneurship, and block chain technologies in the process, and promotes working hand in hand and under the same roof.

Challenges and lessons learned

- The major challenge and task is in **connecting all relevant stakeholders, policies, the economy, people, and knowledge**. This task is not an end in itself – we are seeking to establish strategically vital points at all levels of society, governance, and partners. It is important to link together all structures of administration, both **vertically**, i.e. from national to local, from policy and measures design to implementation, **and horizontally**, i.e. among individual sectors and also with branches and professions for developing innovative solutions. The challenge is to create **truly constructive, two way dialogues** in the spirit of common cooperation.

- **Shared vision** is crucial for greater consistency of policies: to recognize and exploit the inherent advantages of the Green breakthrough, and encourage changes in thinking and behavior management, both in individuals, companies, and countries.
- **Existing examples of best practices are indispensable** for seeking solutions and designing measures for specific needs. The possibility of involving everyone brings experience, knowledge, skills, and a willingness to connect in contributing creatively to new solutions. Cooperation between the various partners with a wide range of expertise also encourages the exchange and creation of new knowledge to support the development processes, and enriches the relationship of trust among those participating.
- Among the great challenges is to achieve **synergy among policies and their measures**, due to the prevailing traditional sectoral approach of acting in most countries and at the EU level. The breakthrough in this area also requires a shift in thinking and readiness for change.
- Given the new knowledge and skills, green growth is both a challenge and opportunity for the labor market and businesses. The transition brings changes in the economy as a whole and within numerous sectors that will create additional jobs. It is important to take in account the **adjusting of education and skills**.
- **More important than new measures in policies is to adjust the existing ones:** we must place our attention on key sectoral policies to reduce the obstacles for green solutions, better taking in account all elements of green development, and make them easier to implement.
- All new, green, and circular economic models require a substantial **shift of the public's mind-set and habits**, the ways of production, and our consumer patterns.

Potential for replication

The concrete steps can vary (due to existing national structures, conditions available, and cultural differences), but the general approach and lessons learned can be replicable basically everywhere.

Contact

Name: Janja Kreitmayer McKenzie

Organisation: Ministry of the Environment and Spatial Planning

Case Study // Round Table SDG 12:

Towards a circular economy: innovation for sustainable value chains

The international Green Deal North Sea Resources Roundabout (NSRR): boosting the circular economy in the North Sea region through a collaborative, multi-stakeholder approach.

The Netherlands

Level: national

Summary

Circular economy is a response to the aspiration for sustainable growth in the context of the growing pressure of production and consumption on the world's resources and environment. The use of waste material as a secondary resource is one of the first actions that businesses can consider to improve both their economic and environmental performance. Value chains are often cross border in nature and so require trans-border shipment of secondary resources.

However businesses perceive barriers in trans-border shipment of waste and secondary resources and are reluctant to invest in starting or scaling up their activities in this field. Addressing these barriers and identifying shared solutions together has the potential to accelerate the transition towards a circular economy.

The NSRR is a so-called Green Deal: a bottom-up, multi-stakeholder approach developed to enable frontrunners in the fields of green growth, circular economy or sustainability. Within the context of the NSRR, business, governments and non-governmental organisations from France, Flanders, The Netherlands and the UK work together to tackle barriers to the international trade and transportation of secondary resources. The over all aim is to boost circular economy in the region and to make regulation that is more conducive to new developments in this field.

Situation

Europe's economy is hugely dependent on the import of raw materials.

Every year in the European Union (EU), nearly 15 tonnes of materials are used per person, while each EU citizen generates, on average, more than 4.5 tonnes of waste annually, almost half of which is disposed of in landfill sites. Within the North Sea region, the economics ties of France, Flanders, The Netherlands and the United Kingdom are very close, for products but also for waste/secondary resources.

These economic ties and their shared ambition for a more circular economy, moved them to collaborate with the aim to increase industry uptake of secondary resources by facilitating cross border use of secondary resources.

Strategy

The Netherlands have a very positive experience in using an instrument called "Green Deal" to promote green growth. In this approach the central government facilitates innovative and voluntary initiatives from society – businesses, non-governmental organizations (NGO's) and local authorities – by supporting entry into networks or by addressing legal barriers if

needed. This Green Deal approach empowers frontrunners by enabling new and ambitious sustainable developments. This approach is based on voluntary, bottom up initiatives. Actions in Green Deals are specific (SMART), but are not legally enforceable. There is no financial support involved in the NSRR.

The NSRR is based upon the experience with the Dutch Green Deal approach and includes similar elements.

Key elements are: integral cooperation and a practical case-by-case approach.

- Private Initiators and Governmental Participants cooperate to identify barriers and consider solutions for a limited number of specific secondary resource cases between countries. These barriers are amongst others related to the “waste or resource” status and hamper cross border secondary resources optimization.
- The Private Initiators intend to increase investments related to secondary resource use in the case of solid solutions.
- The intention is to share the lessons learnt in the cases with All Participants and Observers and even more widely with the objective of facilitating the movement of secondary resources within and eventually beyond the North Sea Region in Europe.

Total duration of the NSRR is five years: a maximum of 10 concrete cases of secondary resources streams will be tackled.

Results and impact

Currently there are 5 cases up and running. These cases deal with hard PVC recylate, compost, bottom ash, struvite and ‘fast-track’ procedures for Weee

1. There is a problem analysis for each case/resources stream
2. Much information and knowledge has been shared between partners, leading to new insights
3. Possible solutions have been identified, explored, some have been implemented, others are still in work in progress
4. Several of the resources now have end-of-waste status in The Netherlands – lessening the administrative burden

Challenges and lessons learned

- Many of the perceived barriers are related to differences in the national interpretation and implementation of EU legislation
- Oftentimes solutions can be found within the existing legal framework
- International, multi-stakeholder cooperation requires time, cultural sensitivity, building of trust etc.
- Dealing with factual, concrete casus is a good way to get concrete insights and illustrations of (more general) problems

Potential for replication

Yes, this can be – and is being – replicated elsewhere. New participants can join the NSRR (f.e. Austria is a partner for one specific case). France has a number of Green Deals, Flanders has a Green Deal on mobility. The EU Commission’s Innovation Deals are also inspired by the Dutch Green Deals.

Contact

Name: Robine van Dooren

Organisation: RVO.nl

<http://www.greendeals.nl/english/>

<https://www.youtube.com/watch?v=kcsdgFs85aw>

nsrr@minez.nl

Case Study // Round Table SDG 12: Towards a circular economy: innovation for sustainable value chains

The food waste management in the Czech Republic

Czech Republic

Level: national

Summary

Food waste is society-wide problem. According to the European Commission estimations 88 million tonnes of food waste are generated annually in the EU.

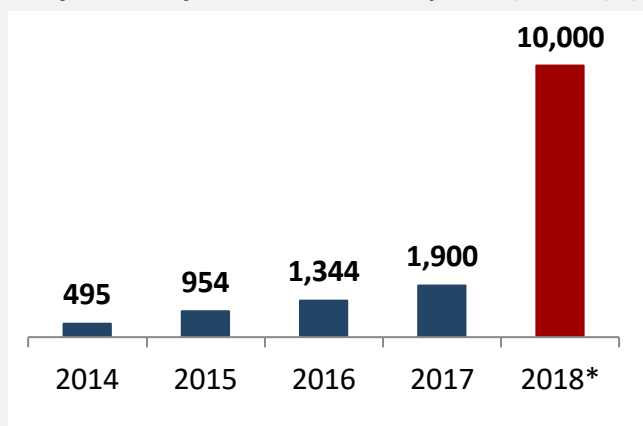
Food waste prevention is an integral part of the European Commission's new Circular Economy Package. It is also one of the targets of UN's Sustainable Development Goals to halve per capita food waste at the retail and consumer level by 2030, and reduce food losses along the food production and supply chains. The Czech Republic is taking the problem of food waste very seriously and fully supports the effort of European Commission and international organizations (namely UNECE and its Working Party on Agricultural Quality Standards) to prevent and to reduce food losses along the whole food chain. The following actions have been carried so far:

- Interdepartmental group
- VAT Guidelines
- Food legislation
- Financial support for the food banks
- Using the EC FUSIONS methodology as for measuring of food waste
- The Ministry of Agriculture also takes part at all the European Union food waste meetings, the EU Platform on food waste, Codex Alimentarius and UNECE's Working Party on Agricultural Quality Standards

Seminars and leaflets with aim to help to promote better understanding of "use by" and "best before" dates by consumers

Situation

Volume of donated food in the Czech Republic (tonnes) - (*expected volume)



Strategy

Support of food donation (legislative and financial)

- **Foundation of the interdepartmental group**

In the year 2015, the Ministry of Agriculture of the Czech Republic initiated the foundation of the interdepartmental group and organized regular round tables which are open to all stakeholders (governmental organizations, food banks, charity org., industry, food business operators (FBO)).

- **Value added tax Guidelines**

Guidelines were developed for setting a minimum value added tax for donated food. These guidelines are the main outcome of the interdepartmental group and were elaborated by the Ministry of Finance with close cooperation of Czech Federation for food banks.

- **Food legislation**

- Best before date

Food labelled with “best before” date can still be sold after the expiration of this date supposing the products are safe and the consumer receives the information that best before date has expired.

- Food donation

A recent amendment of the Czech Food Law supports to reduce food waste in the Czech Republic. According to this amendment, all retail outlets with a sale surface of more than 400 square metres are from the 1st January 2018 obliged to donate food that is safe but not correctly complying with the requirements of food law (e.g. incorrect labelling, deformed packaging), to the local food banks, charities and non-profit organisations. Retail outlets with a sale surface of less than 400 square metres have the possibility to donate such food, but no obligation. In the both cases, the food must be donated free of charge.

- **Financial support to food banks**

The Czech Federation of Food Banks consists of 14 food banks, which operate in all Czech regions. Food banks cooperate and distribute food to 349 humanitarian organisations. Since 2016 the food banks and charity organisations can apply at the Ministry of Agriculture for a subsidy to support the financing of their running costs and equipment. Organizations can apply for max. 20 000 EUR/year for running costs and for max. 40 000 EUR/year for their equipment (incl. car for food distribution).

Results and impact

The Ministry of Agriculture has received very positive feedback from the food banks and the other humanitarian organisations regarding help with their investments into warehouses and also significant increase in volume of received food.

Challenges and lessons learned

There are still not complex result numbers on food waste amount in the Czech Republic. This task we are currently working on remains as a great challenge for the upcoming years.

Potential for replication

The potential of replication of our actions can be very good – it combines elements tailored to the local circumstances with regional and international elements and best practice. The applied measures cover different areas as food labelling, food donations and governmental grants. And very importantly it is an inclusive approach based on a strong policy commitment and the participation of all stakeholders (public, private, civil society, and academia) in consultations to bring about real and lasting reduction of food loss.

Contact

Name: Ing. Jindřich Fialka, Ing. Irena Zelinková
Organisation: Ministry of Agriculture of the Czech Republic

Ministry of Agriculture web page on food waste:

<http://eagri.cz/public/web/mze/potraviny/aktualni-temata/plytvani-potravinami-1/>

Czech Federation of Food Banks:

<http://www.potravinovabanka.cz/>

EU references on food waste and circular economy

https://ec.europa.eu/food/safety/food_waste_en

http://ec.europa.eu/environment/circular-economy/index_en.htm

UNECE work on food loss

<http://www.unece.org/index.php?id=44974>

<http://www.unece.org/index.php?id=41409>

http://www.unece.org/fileadmin/DAM/trade/agr/meetings/ge.01/2017/WP7_GE1_2017_02_15_May.pdf

Codex Alimentarius on food loss:

<http://www.fao.org/fao-who-codexalimentarius/roster/detail/en/c/428396/>

Case Study // Round Table SDG 12: Towards a circular economy: innovation for sustainable value chains

Responsible consumption and production in the Republic of Moldova – Organic Agriculture

Republic of Moldova

Level: national

Summary

The Republic of Moldova's favourable climatic conditions endow the agricultural sector with a comparative advantage for organic farming. Coupled with the country's competitive advantage as GMO (genetically modified organism) free, and the sector's role in shaping the livelihoods of half of the population, the development of this sector is critical for achieving the 2030 Agenda.

This case study provides an overview of the Government's efforts to develop organic agriculture in a manner that is consistent with the requirements of achieving sustainable production and consumption. It highlights key reforms for creating goods and services using processes and systems that are non-polluting; conserve energy and natural resources; economically viable; safe and healthful for workers, communities, and consumers and socially and creatively rewarding for the industry's working force.

Situation

The prospects of developing organic agriculture cannot be understood in isolation of the economy's growth dynamics. Despite the government's consistent liberalization efforts, the economy is yet to register the expected structural transformation towards increased specialization in high value-added activities. The economy continues to be dominated by the services sector, which accounted for 60 percent of gross domestic product (GDP) and absorbed more than 50 percent of the country's labour force in 2015.

Reforms to date have set in motion a structural transformation away from agriculture. However, the move away from agriculture was underpinned by dwindling productivity, even as this sector constituted the main livelihood source for 57 percent of the population.¹ National statistics show that following a significant decrease (from 51 on 2001 percent to 28 percent in 2011), the share of agriculture in employment increased to 32 percent in 2015, while its share in GDP stagnated at 10 percent since 2011 (down from 25 percent in 2001). The manufacturing sector remains dominated by low value-added activities. The sector's contribution to job creation increased by 1 percent over the period 2001-2014 (from 11 to 12 percent), while its share in GDP decreased by 2 percent (from 27 to 25 percent), reflecting weak technological capabilities (understood as the accumulated knowledge and skills to identify, appraise, utilise and develop technologies and techniques to modernize production processes).

These structural weaknesses are well pronounced in the farming and food processing industry. Over 80 percent of the cultivated land is used for growing low value products, such as crops, oil plants and sugar beet. Fruit and vegetable farms cover less than 6.5 percent of total agricultural lands, despite the favourable climatic conditions, and yield around 1 million tons of produce annually with apples, potatoes and tomatoes accounting for the bulk of the sector's total output. Moreover, the

¹ National Bureau of Statistics of the Republic of Moldova. The statistics do not include data on enterprises and organizations on the east bank of the river and the municipality of Bender. Unless otherwise mentioned, all the statistics in this section are derived for the National Bureau of Statistics of the Republic of Moldova

majority of the lands are small, with 80 percent specialized in semi-subsistence activities. These farms rely on Commonwealth of Independent States (CIS) countries for selling their produce, particularly the Russian Federation that have historically accounted for 97 percent of agricultural exports in volume terms.

The challenge is how best to address the economy's deep-seated structural weakness. Priority is accorded to improving the productive capacity of farmers and enterprises engaged in organic agriculture, and to making their products traceable from the field to the trader.

Strategy

Efforts to develop organic products commenced in 2000 with the adoption of "the National Concept of Organic Farming, Production and Trade of Environmentally Friendly and Genetically Unmodified Foods" pursuant to Government Decision No. 863. Further guidance was provided by the Law "On Organic Food Production" (Law No, 115) of 2005 and the "National Strategy for Agricultural and Rural Development 2014-2020". The two documents aim at bringing the industry into compliance with the European Union (EU) quality standards and regulatory requirements. The strategy also attaches great importance to financing and promoting innovation in agriculture, thereby providing new impetus to the green subsidies initiative that was launched in 2007.

Since 2014, the development of this industry has also been guided by the new wave of economic reforms that were launched following the signing of the Association Agreement (AA) and the Deep and Comprehensive Free Trade Area (DCFTA) with the European Union. With their emphasis reflecting the *EU acquis communautaire* in national legislation, these reforms provide a powerful tool for addressing the agricultural sector's deep-seated structural weaknesses.

At present, the Ministry of Agriculture and Infrastructure, working closely with relevant agencies, is developing a market surveillance and control system to ensure traceability of organic food products. The Government is also in the process of transposing EU Regulation (EC) No. 834/2007 of the Council regarding the organic production and labelling of organic products, so as to create a favourable environment for organic farming, increase the consumption of bio-products and, thereof, reduce the amount of chemical waste.

Broader directives for guiding the development of organic agriculture are also spelled out in the Government's Action Program for 2016-2018. Complementing the strategy is the National Action Plan for Trade Facilitation. The Action Plan was adopted by the Government in December 2017 pursuant to Government Decision No. 1065, in order to fulfil the country's commitments under the World Trade Organization Agreement on Trade Facilitation.² The plan, which integrates the recommendations emerging from ECE Study on Regulatory and Procedural Barriers to Trade³, covers behind and at the border constraints, with an estimated budget of over Euro (EUR) 137,1 million. It comprises 35 chapters, with 91 actions, which will be implemented by fourteen State agencies in collaboration with the private sector under the guidance of the National Trade Facilitation Committee that brings together public and private sector stakeholders.

The organic farming industry also stands to benefit from the Moldova Social Innovation Hub (MiLab), which provides a multilateral platform for supporting experience sharing between the public, private, non-profit, and market support institutions.

Results and impact

- The wine industry has registered an impressive performance record. Over 80 percent of wine producers are equipped with modern machinery and technology, with secondary wine

² The Plan is available at: <http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=373269>

³ The Study is available at: <https://www.unece.org/tradewelcome/studies-on-regulatory-and-procedural-barriers-to-trade.html>

units reassembled almost entirely with modern bottling lines. The volume of grape processing and wine production from raw material increased to 500,000 tons (approximately 250 million liters of wine). Today, Moldova is home to the biggest wine collection in the world with over 1.5 million bottles of quality wines, included in the Guinness Book in 2005. The so-called “Golden Collection” is stored at over 80 meters depth, in the underground galleries of Milestii Mici, which is over 200 kilometres in length.

- The Agriculture Sciences Section of the Moldovan Academy of Sciences presented several important innovations in the agricultural sector, with a view to support the development of organic agriculture and the sector as a whole. The technologies are being used to develop new types and new species of fruits, chicken and sheep.
- Moldovan scientists consider that the quality of soil is critical for ensuring the efficiency and quality of agricultural products, and are developing digital maps to determine the appropriate types of products for farmers. In 2016, digital maps allowed producers from the Ungheni region to avoid serious losses, by postponing seed planting and germination in the region that was under risk of landslides. The estimated costs of research and digital mapping of 100 thousand hectares in Moldova is approximately USD 100,000.

Challenges and lessons learned

- *Organic food producers must sign a contract with a private certification body that is accredited with the EU, which inflates their transaction costs. For example, a farmer who cultivates 50 hectares of grain and 10 hectares of fruit pays a fee equivalent to 692 euro per year to the Certification Body to obtain a certificate that will allow him to export to the European Union.*
- *Organic production, which is a voluntary scheme, requires substantive investments that are beyond the farmers’ and food processors’ means. Organic seeds are expensive, just like fertilizers and in some cases buffer zones may be needed to avoid contamination. Enterprises that are not registered in the national certification system cannot access green subsidies.*
- *Conformity assessment results issued by Moldovan conformity assessment bodies (CABs) are not recognized in the EU, as MOLDAC is yet to join the European Cooperation for Accreditation (EA) Multilateral Recognition Arrangement (MLA) and International Laboratory Accreditation Cooperation (ILAC) mutual recognition agreement (MRA).*
- For a country like the Republic of Moldova, where the Government is struggling with persistent current account and trade deficits, and where the enterprises are still labouring under the lingering impact of the economic crisis in the Eurozone, financial resources and technical assistance are critical for ensuring the successful implementation of major reforms.

Potential for replication

If there were one lesson to draw from the experience of the Republic of Moldova, it would be the establishment of broad based public-private sector consultations to inform reform decisions. The fashioning of evidence-based analysis is another important lesson that could be replicated along with the industries’ experiences. Each industry had to overcome specific challenges and growth constraints in a lengthy process of learning by doing. It is these processes that should be replicated because they are born out of the daily realities and specific needs of the enterprises.

Contact

Name: Iuliana Dragalin, State Secretary for Quality Infrastructure and International Cooperation

Organisation:

Ministry of Economy and Infrastructure of the Republic of Moldova

Ministry of Agriculture, Regional Development and Environment of the Republic of Moldova

Case Study // Round Table SDG 12:

Towards a circular economy: innovation for sustainable value chains

Sustainable agriculture and rural development strategy based on quality centred production and consumption in Montenegro**Montenegro***Level: national***Summary**

Guided by the determination to establish an ecological state, Montenegro was among the first countries in the region of South-East Europe that defined the strategic and institutional framework for sustainable development. The agricultural sector in Montenegro is characterized by small scale, often-fragmented production and typically located in mountain areas with difficult market access and weak infrastructure. In an international market with large-scale production, low unit costs and standardized products, Montenegro products face very strong competition in terms of both quantity and price. In the Strategy of Agriculture and Rural Development 2015-2020, Montenegro chose to accept the concept of sustainable development by targeting to achieve a good balance between economic development, environmental protection and other social aspects. The starting point for the strategy was the recognition of the multi-functional role of agriculture as well as considering the ecological footprint of agriculture production and as such the contribution to SDG target 12.2; it was evident that agriculture should be viewed in a broader context than just as a contributor to GDP. The case study will outline lessons learned from the implementation of the strategy and in this context its contribution to achieve SDG 12 and particularly targets 12.2. The lessons learnt during implementation of the strategy offer learning material for the peer to peer discussions at the round table.

A policy focused on quality is an example of the policy supporting responsible production with quality schemes incorporating codes of practices, cultural heritage and local natural use and centred on local human potential, environmentally friendly (organic production) and consumer-focused (developed for specific consumer preferences for healthy food, animal-welfare friendly and authentic). Such an approach is a key contribution for indicator 12.2

Situation

The agricultural sector plays an important role in the economy of Montenegro, contributing a significant share of Gross Domestic Product (7.5 percent in 2016, including forestry and fishing). Based on official statistics (data from Labour Force Survey 2016), agriculture employs 7.7% of total employed in Montenegro. However, according to the Agriculture Census 2010, out of 620,029 inhabitants of Montenegro, 98,341 is engage in agricultural activities on family agricultural holdings. The surface of agricultural land in Montenegro amounts 309,241 ha, which makes 22.4% of its territory. Out of this surface, 95.2% belongs to agricultural holdings, and the rest 4.8% belongs to business operators. The average agricultural holding has 4.6 ha of used agricultural land. Large number of uncultivated land is a consequence of large share of pastures in total agricultural land in Montenegro. Total trade of agricultural products in 2016 amounted to 547.2 million euros, an increase of 4.3% (or 22.8 mil. €) compared to the same period last year. Exports account for 11.4%,

while imports account for 88.6% of trade. The share of agricultural products in total exports was 17.2% and in total imports 23.8%.

Following the analysis of the current competitiveness of agriculture in Montenegro and in the region, it became evident that in an international market with large-scale production, low unit costs and standardized products, Montenegro products face very strong competition in terms of both quantity and price.

Only segmentation focused on quality and sustainable management of the natural resources would allow to benefit from growing consumer markets inside and outside country, as well as attract more tourists providing additional income for rural population working in agriculture, food production and processing and services.

Strategy

The strategic vision for agricultural policy was set on quality and sustainable management of the natural resources, better positioning the country and the agrifood sector in the long term and enabling sector to benefit from growing health and organic centred consumer markets in Montenegro and outside the country. Preserved natural resources and well supported short value chains, linked with rapidly growing tourism segment, can bring immediate effect in fostering quality production and thus also making production more efficient resulting also in more responsible consumption and waste (target 12.4) as well as equitable distribution of income for rural population working in agriculture, food production and processing and services. In the long-term, Montenegro set to increase its number of producers involved in quality schemes and in organic production as well as increasing the scope of production in all areas of agriculture in Montenegro.

Results and impact

Once priorities and strategic goals are elaborated, the presentation focuses on how the responsible production focused on quality impacts the rural communities, farm and non-farm income, social and economic engagement of the communities in the policy setting/revision, employment generation and what benefits (availability of more products, price attractiveness) for quality-focused domestic and foreign consumers.

Challenges and lessons learned

Key challenges are – administrative (availability of internal staff trained, internal procedures when implementing policy and internal procedures to reflect on feedback from stakeholders), stakeholders' engagement (visibility and communication with key stakeholders, specifically communities, municipalities and farmers, associations), inter-institutional cooperation (cooperation on the topic with ministries and other institutions).

Potential for replication

Having learnt the results and the impact, lessons learnt, a country with less favourable natural conditions may use a quality-centred production policy or some of its core elements as a strategic approach as a contribution to achieve SDG 12. It is one of the policy options to strengthen long term competitiveness of the domestic agrifood sector and increase delivery of positive environmental effects to the population of the country and neighbouring region. With funding available and implementation well monitored, a country contributes to the achievement of the SDG 12 and other SDGs.

However, it is recommended to carefully assess preparedness of the budget and administrative structures to support the policy by having an opportunity to correct that would ease long term implementation.

Important is also the consideration of the cross-sectoral linkages and particularly the contribution to multiple SDGs such as SDG 15.

Contact

Name: Mrs. Daniela Stolica, Director General

Organisation: Ministry for Agriculture and Rural Development (MARD)

Case Study // Round Table SDG 12:

Towards a circular economy: innovation for sustainable value chains

Nordsyn – a project of the Nordic cooperation council for green and compliant products

Nordic Council of Ministers

Level: national

Summary

The European Union's Ecodesign Directive facilitates the transition towards a circular economy by ensuring that products can be repaired, reused and safely recycled. Together with supporting implementing regulations it will generate savings of 500 TWh electricity and 5% energy use per year by 2020.

A condition for this result to be achieved is that products put on the market comply with the Directive's requirements. In the EU, it is the national market surveillance authorities (MSAs) that are tasked to monitor products on the market. Effective market surveillance contributes to a fair and level playing field for the industry and protects consumers from inefficient products and misleading information. Alarming, a 2011 Commission review estimated that 10–20% of products covered by the directive were non-compliant.

Nordsyn was then set up by the Nordic cooperation council in 2013, and is now a continuing project. It has led to better cooperation among market surveillance authorities, generating savings of EUR 28 million for a cost of EUR 2 million. This shows convincingly that enforcing ecodesign and energy labelling requirements pays off, especially within the context of a regional coordination effort.

Situation

In order to realize the benefits of any given regulation, authorities must ensure that it is complied with, in particular through market surveillance actions which are costly and difficult.

Strategy

Nordsyn contributed to multiply the outcome of market surveillance costs of each country, by effecting better cooperation among authorities (i.e. by sharing market control plans, test results, results of documents' control). It has also made market surveillance actions more preventive through the development of hands-on material, such as information sheets and guidelines.

Results and impact

The Nordsyn Project—with its EUR 28 million in savings - is one of the success stories of the Nordic Council. It continues to secure good market surveillance in the Nordic countries and also gives valuable input to policy discussions by specific studies on heat pumps, windows, fans etc.

Extending good practices learned on the project to the European Union market is essential to ensure that the ecodesign and energy labelling regulations achieve their stated objective of saving 500 TWh electricity and 5% of EU energy use per year in 2020.

Challenges and lessons learned

Market surveillance is a challenge for all the countries in the UNECE region, especially in the context of tight budget constraints. This is especially true in the field of circular economy because resource efficiency requirements like reparability, recyclability etc. are hard to measure and robust methods are still to be established. Market surveillance of systems, built-in products etc are very complex fields.

Nordsyn offers the possibility to study and explore these difficult areas.

Potential for replication

Nordsyn is a Nordic cooperation on market surveillance of ecodesign and energy labelling, and similar cooperation projects have been initiated at EU level, though the continuous active Nordsyn cooperation is rather unique. So replication is possible, and might be explored also beyond the EU borders. Nordsyn established contacts with the UNECE Advisory Group on Market Surveillance to ensure that best practices can be shared with other UNECE Member States.

Contact

Name: Lovisa Blomqvist, lovisa.blomqvist@energyagency.se

Organisation: Swedish Energy Agency and Nordic Council of Ministers

Case Study // Round Table SDG 12: Towards a circular economy: innovation for sustainable value chains

Towards a Model of Circular Economy for Italy - Overview and Strategic Framework

Italy

Level: national

Summary

"Towards a Model of Circular Economy for Italy - Overview and Strategic Framework" is a document that defines Italy's strategic positioning on circular economy, describes the national vision and calls for a paradigm shift in Italy's economy, in the way we consume, we produce and we do our business.

The document is composed of 4 main parts which describe respectively: 1) the principles and objectives of circular economy as stated at international, European and national level, with the provision of country-specific challenges and opportunities; 2) the paradigm shift needed to support new production models based upon Eco-Design, Extended Producer Responsibility, Industrial Symbiosis, Bioeconomy, (this latter comprising a dedicated strategy launched on 20 April 2017) and new business models such as sharing economy, leasing economy etc.; 3) the regulatory and economic instruments, including the environmental fiscal reform shifting the fiscal burden from labour to natural resources; 4) the transition phase based upon a new concept of waste, the role of public sector (e.g. GPP), and the monitoring framework, this latter supported by a working group established within the Ministry for the Environment to define the most suited set of indicators to measure progress and allow reliable assessment on public and private initiatives.

Strategy

The document aims at supporting the implementation of the National Strategy for Sustainable Development, recently adopted on the 22nd of December 2017, in particular regarding the vision for an efficient use of resources and sustainable consumption and production patterns. In this context, the greatest challenge for Italy, along with most industrialized countries, in the next decade will be to adequately and effectively respond to the complex environmental and social dynamics while maintaining a competitive productive system.

Considering the complexity and the importance of the document, the Italian government organised a public consultation to collect contributions from different institutions, enterprises, experts and citizens who deal daily with the issue of circular economy to develop a document that is the result of a shared and participatory process. The consultation process was very broad: over 300 representatives of public administrations, small, medium, and large companies, associations, consortia, certifying bodies, and private citizens provided contributions showing ownership and active participation in the efforts to promote circular economy as an opportunity for the transition of Italy towards sustainable development.

Results and impact

The document represents a first step towards promoting a new circular economy model for Italy. It provided the opportunity to build a shared platform for defining a "National Action Plan on the Circular Economy", capable of setting goals, describing policy measures, and identifying implementation tools.

The consultation process emphasized the pressing demand for action on specific areas, including among others: 1) the regulatory framework with aim of improving coherence and consistency with

the overall objectives and promote a simplification process; 2) economic instruments to support the transition towards a circular economy model also through environmental tax reform; 3) communication and awareness raising to promote ownership and active participation of citizens, central and local administrations, to show case the opportunities and benefits linked to circular economy and enhance cooperation and support among different actors (public, private, research, academia); 4) promote research to foster innovation and new technologies, to increase competitiveness in industrial sectors and train managers and technicians in order to meet the new needs of the Circular Economy.



SDG 15 – Life on land

Sustainable Management of Forests and Ecosystems (1 March 2018, 15:00-16:30)

- A journey through the value chain of wood: the case of Austria.
Austria
- Forest products and the bio-economy: the case of Finland
Finland
- Sustainable forest management for cities: The “green belt” of Astana city
The Republic of Kazakhstan
- KEA Wood Direction – Having positive impact on people, society and planet.
IKEA of Sweden AB - Inter IKEA Group
- Carbon forests - a natural solution to enhance climate change mitigation efforts
Poland
- INTEGRATE – A European-wide network to enhance nature conservation in sustainably managed forests
European Network Integrate

Biodiversity at the Heart of Sustainable Development – Toward Transformation and Resilience (1 March 2018, 16:30-18:00)

- Earth Observation technologies designed for action
Georgia
- Expanding Protected Areas in the Balkans
The Former Yugoslav Republic of Macedonia
- Sustainable tourism development through the Carpathian Convention
Poland

Case study // Round Table SDG 15: Sustainable Forest Management and the SDGs

A journey through the value chain of wood: the case of Austria.

Federal Ministry of Sustainability and Tourism, Austria

Level: national

Summary

The Austrian case demonstrates the possibilities of products along the value chain of wood, coming from the source of sustainably managed forests, secured by the implementation of a sound governance system - with a focus on wood as a sustainable energy resource. Today, about 1.5 million households are using wood as main or supplementing heating device in Austria. Wood by-products, fuelwood, pellets and wood briquettes are covering 79 per cent of the gross domestic consumption of bioenergy. The provision of the renewable resource wood is ensured by the enforcement of rules agreed upon in the Austrian Forest Dialogue, which are in line with the principles of a transparent, open and participatory policy and administration (good governance).

Situation

Forests cover almost 50 % of the total Austrian land area (SDG ind. 15.1.1), which is increasing by 4300 hectares annually (SDG 15.2.1 sub-indicator). The successful implementation of sustainable forest management has a long tradition in Austria. In order to harmonize the Austrian law with international developments, the definition of sustainable forest management (Helsinki Resolution) adopted at the Ministerial Conference on the Protection of Forests in Europe (Forest Europe) has been included in the Austrian Forest Act. Austria is also endorsing the „Pan-European Criteria and Indicators for Sustainable Forest Management“ adopted by FOREST EUROPE which offer orientation for forest policy-making in Austria and provide the contextual framework for surveys and reporting. They are the points of reference for the Austrian Forest Dialogue and the thematic frame for the Austrian Forest Report.

Using wood from sustainably managed forests has a positive impact on climate change, and is a major pillar of the green economy. The Austrian wood sector is a multi-faceted economic sector, comprising the saw milling industry, the construction sector, the furniture industry, the wood products industry as well as the ski industry. Most of the companies of the wood industry are small and medium sized enterprises. Forests play a crucial role in transforming towards a greener economy, as renewable source of biomass, bioenergy and fuel (SDG target 7.2). By international comparison, Austria is one of the leading nations with regard to the utilisation of biomass. Conforming to EU's Climate and Energy Policy 20/20/20 Targets, Austria's 2020 Targets are to reach a 34 % share of renewable energy and 16 % reduction of GHG emissions in non-ETS sectors. Currently, the share of renewable energy in the gross end-energy consumption is 33%, whereas 45 % of the renewable energy is based on wood. Biomass is one main focus of the pillar "renewable energy" of the Energy Strategy Austria. The amount of Roundwood used for the generation of energy (forest wood chips, fuelwood) reaches about 4.96 million m³ of timber harvested under bark. The utilization of wood for affordable and clean energy creates added value and jobs and reduces household expenses (SDG 11). According to the Austrian Biomass-Association wood chips, log wood and pellets are 40-50 % cheaper than heating oil or gas. The sector of solid biomass employs more than 15.000 full-time workers and generates revenues of 2 billion EUR annually. In all over Austria more than 2.100 biomass district heating plants create regional jobs and prevent rural-urban migration. Research shows that the use of wood as energy source prevented GHG-emissions of about 10 million CO₂ equivalents in 2015 in Austria.

Strategy

To ensure and optimise the products and all dimensions of sustainable forest management in a balanced way, while paying special attention to the added value and the potential of the Austrian forest and timber sector, a national Forest Strategy was adapted in 2016. The Austrian Forest Strategy 2020+ defines forest-political milestones for the years to come and was jointly developed by 85 organisations involved in forest policy within the scope of the Austrian Forest Dialogue. These organisations include forest proprietors, beneficial owners as well as interest representatives. Broad social acceptance for forestry activities and good cooperation with various other sectors are essential to long-term success.

The Austrian Forest Strategy 2020+ takes into account the policy specifications of current national and international forest-related strategies, programmes and processes.

THE STRATEGY comprises seven forest-political fields of action in line with national as well as international reporting obligations:

1. Contribution of Austrian forests to climate protection
2. Health and vitality of Austrian forests
3. Productivity and economic aspects of Austrian forests
4. Biodiversity in Austria's forests
5. Protective functions of Austria's forests
6. Social and economic aspects of Austrian forests
7. Austria's international responsibility for sustainable forest management

Results and impact

Six factors are crucial for the implementation of sustainable forest management and the steps and products along the whole added value chain:

1. A widely recognised commitment to comprehensive sustainability in forests
2. Legal Framework:
 - Protection
 - Rights
 - Obligations
 - Limitations
3. Institutional Structures:
 - Law enforcement
 - Knowledge Management
 - Research and development
 - Education, training, advisory
 - Representation of interests (forest owners, business sector, NGOs e. a.)
4. Financial Instruments:
 - Economic Revenues
 - Investments
 - Taxes
 - Incentives, Subsidies
 - Payment of Ecosystem Services
5. Information Services:
 - Monitoring, Assessment and Reporting for the verification of sustainability based on criteria and indicators for SFM
→ Austrian Set of Indicators for SFM (7 Criteria, 65 Indicators)
6. Stakeholder participation:
 - Austrian Forest Dialogue
 - Cross-sectorial cooperation
 - Balancing conflicting interests

- Policy development and implementation

Challenges and lessons learned

The forest is expected to supply expanding markets with sufficient amounts of timber as renewable resource and source of energy. It is expected to protect valleys against avalanches, rock falls, mudflows and other natural hazards. It is a hub of biodiversity that should be able to develop as freely as possible. It is expected to store carbon as a contribution to climate protection and to provide clean drinking water and to serve as a popular recreational destination whose landscape attracts millions of tourists year after year. The forest is expected to provide for all of that in a "sustainable" manner, i.e. all at the same time and continuously.

A crucial factor ensuring the success of all the efforts to promote sustainability in the forest is the acceptance and motivation of the forest owners and their full involvement in all political processes related to forests. Further success factors are the acknowledgment of the services provided and their fair financial compensation.

Potential for replication

The Austrian Forest Dialogue is a policy development process initiated in 2001 that is open, continuous and participatory in nature. It has become a much lauded example of good governance both nationally and internationally. In 2005, the first Austrian Forest Programme was adopted within this framework. In 2016, the participants of the Forest Dialogue adopted the Austrian Forest Strategy 2020+, followed by the work programme in 2017, which includes more than 200 initiatives. The participatory good governance process and its' outcomes can be taken as examples to initiate similar policy processes within and outside the sector, on a national and international scale.

Contact

Name: Lisa Lehner

Organisation: Forest Directorate General, Federal Ministry of Sustainability and Tourism, AUSTRIA

Case study // Round Table SDG 15: Sustainable Forest Management and the SDGs

Forest products and the bio-economy: the case of Finland

Ministry of Agriculture and Forestry, Finland

Level: national

Summary

The case study refers to the implementation of the Finnish Bioeconomy Strategy which is the result of a governmental resolution of 2014. After the parliament election in 2015, the new Government of PM Juha Sipilä produced an action plan for the implementation of its vision: - *In 2025, Finland is an inventive, caring and safe country where we can all feel important. Our society is based on trust.* The action plan has five strategic priorities and the bioeconomy is one of them. Some 300 million euros were allocated to boost activities in the field of bioeconomy and clean technologies during the years 2016-2018. The objectives in the field of the bioeconomy are as follows:

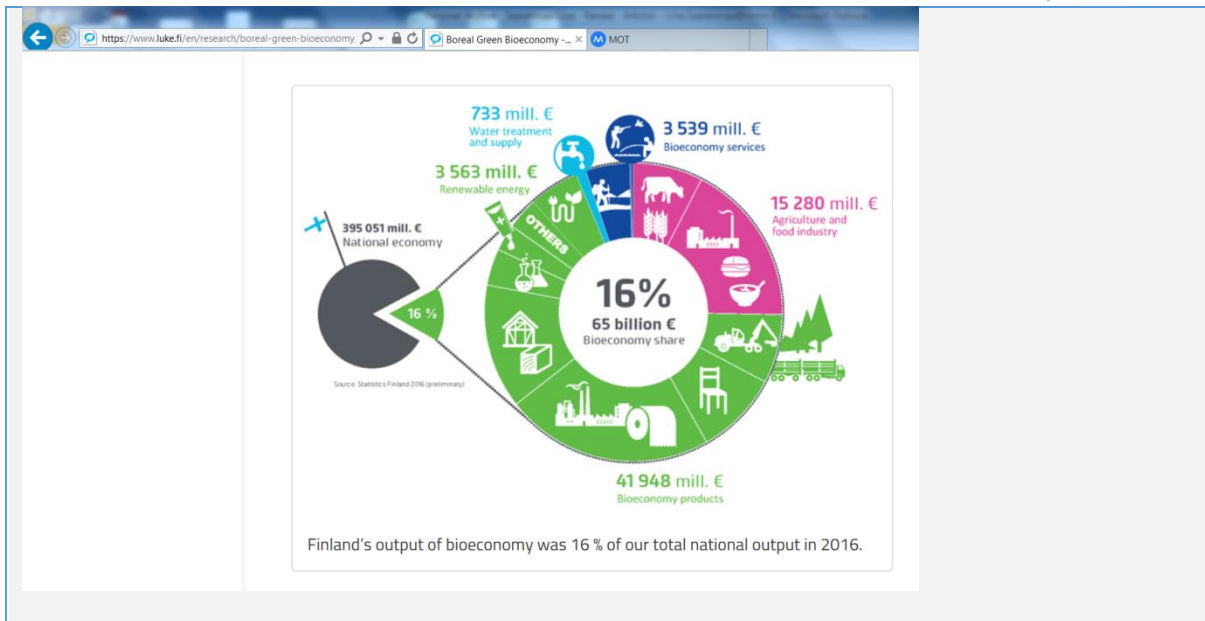
- Finland will achieve the 2020 climate objectives during the government term.
- Imported fossil fuel-based energy will be replaced by clean and renewable domestic energy.
- New jobs will be created through the growth of enterprises in the field of clean technologies, the increase in sustainable use of natural resources, versatile rural SME's and an efficient circular economy.
- The trade balance will be improved by 500 million euros based on the better profitability of the food sector.
- The administrative burden of the enterprises will be significantly reduced.

The action plan includes several measures in the field of forestry and forest industries. The purpose is to increase the supply of wood and diversify its use ; to develop new products, services and business models in the field of bioeconomy; and to accelerate innovations through pilot projects and innovative public procurement.

More than half of the Finnish bioeconomy is forest-based. Global drivers push strongly the transformation towards a bioeconomy, and we can see the change already happening. The transformation towards a bioeconomy will require a new kind of cross-disciplinary and cross-industrial co-operation, and we believe this will lead to the creation of new business models in the forest sector. Finally, the end users are consumers, and they will ultimately drive the market and their choices define what kind of products and services will have the highest demand.

Situation

The national output of the bioeconomy in Finland was 16 % of the total in 2016. More than half of the Finnish bioeconomy is based on the forest sector, which means forestry (the management and harvesting of forest resources) and forest industries (processes, services and products). The objective is to increase the output of the bioeconomy up to 100 billion euros by the year 2025. In 2016 the value of the bioeconomy was 65 billion euros. The economic growth in the field of bioeconomy needs to be 4 % annually to reach the target.



Strategy

The Finnish bioeconomy strategy includes measures for each of the strategic priority areas. The strategy is implemented jointly between the ministries of Economy and Employment, of Agriculture and Forestry and of the Environment.

The Government of Finland has allocated some 300 million euros as extra funding for the years 2016-2018 to boost the development of clean solutions, new products, and environmental measures.

A follow-up system is in place.

Results and impact

- New investments in the forest sector including forest-based biorefineries
- Enhancement of wood construction
- Rapid growth of nature tourism
- New business models based on ecosystem services

Potential for replication

Several countries have published their national bioeconomy strategies and this strategy could serve a good example for those that have not yet done so. .

Contact

Name: Liisa Saarenmaa

Organisation: Ministry of Agriculture and Forestry

Case study // Round Table SDG 15: Sustainable Forest Management and the SDGs

Sustainable forest management for cities: The “green belt” of Astana city

The Republic of Kazakhstan

Level: national, subnational

Summary

The creation of a “green belt” around the city of Astana, the capital of the Republic of Kazakhstan, has been underway since 1997. Among the main aims behind the project is improvement of the environmental situation in the city, specifically reducing wind load and improving air quality and the level of dust pollution in urban areas. In addition, the introduction of a “green belt” around Astana serves to create recreational spaces for residents and guests of the capital, as well as improve livelihoods of the local population through new job creation.

The project is financed by the Government of Kazakhstan and implemented by state enterprise “Zhasyl Aimak”.

The creation and gradual expansion of Astana’s “green belt” has taken place over a number of stages described in greater detail below. During the development and implementation of the project, various methods and strategies for the creation of green spaces were considered and evaluated, studying the international experience and best practices in afforestation and sustainable forest management (including that of the Russian Federation, the People's Republic of China, Canada and Mongolia). This approach resulted in the selection of the most effective, appropriate and sustainable methods of “greening” the city of Astana.

Strategy

The first stage in the creation of Astana city’s “green belt” involves conducting scientific research and the identification of suitable tree planting technologies, along with the development of recommendations on the tree and shrub species to be selected.

Over the next 2-3 years, a number of measures are taken to prepare the soil, including ploughing, harrowing and cultivation, and snow retention. The material to be planted is grown in specialist tree nurseries.

In the five years after the establishment of tree plantations, forest cultures are carefully cared for using techniques such as manual weeding in rows, mechanized cultivation in row-spacing, watering of the plantations in the first year of creation, and artificial shading of trees and shrubs.

Lastly, various measures are taken to prevent forest fires and illegal logging, as well as to combat the spread of harmful diseases and pests. This stage also involves the reintroduction of fauna, specifically resettlement of wild ungulates and the breeding and release of pheasants into Astana’s “green belt”.

Results and impact

In the last ten years, an area of 78,000 hectares around the city of Astana has been forested. The “green belt” of Astana is expected to reach 100,000 hectares by 2020.

Although the full impact of the “green belt” will not be felt until the forests reach full size and maturity, numerous benefits can already be observed. It is reported that thanks to the introduction of the “green belt”, temperatures in Astana have increased by 0.3C since 1997, while average wind speeds have fallen. According to the Kazgidromet national meteorological centre, there has been a threefold drop in the amount of snowstorms and fog in the capital.

In addition, the forest of the “green belt” has been described as a natural oasis inhabited by wild animals and birds, such as foxes, hares and pheasants. Construction of a recreational zone in the “green belt” forest is currently underway.

Challenges and lessons learned

The challenges encountered during the creation of Astana’s “green belt” included a high level of soil salinity, close proximity of groundwater to the surface, a severe and sharply continental climate (temperatures ranging from -40C in winter to +40C in the summer), low precipitation (150-250 mm/year) and strong winds.

Initially, extreme weather conditions had meant that few trees were able to survive, leading the authorities to plant trees in test conditions in order to determine in advance whether they would be able to tolerate Astana’s harsh climate.

Over the years, invaluable experience was gained in the design of forest plantations, soil cultivation, application of soil desalinization technologies, creation of strip plantations, and successful selection of tree and shrub species, taking into account the natural, climatic and soil conditions of the region.

Potential for replication

Following on from the experience of the “green belt” around Astana city, work has now begun on the creation of green belts around other regional centers of the Republic of Kazakhstan.

Contact

Name: Mr. Maxat Yelemessov

Organisation: Forestry and Wildlife Committee of the Ministry of Agriculture of the Republic of Kazakhstan

Email: elemesov.m@minagri.gov.kz, M.Elementcov@msh.gov.kz

Case study // Round Table SDG 15: Sustainable Forest Management and the SDGs

IKEA Wood Direction – Having positive impact on people, society and planet.

IKEA of Sweden AB - Inter IKEA Group

Level: regional

Summary

IKEA has launched a new IKEA direction with three roads towards 2025:

1. Make IKEA affordable for people who cannot afford IKEA today
2. Reach and interact with many more of the many people, where they are
3. Create a positive impact on people, society and the planet

What will that mean for an important material as wood in IKEA?

IKEA has already taken steps toward having a positive impact, with focus on the goal to be forest positive by 2020 (SDG15). The audience will be informed about the way forward (SDG12), with IKEA's clear ambition to go through a transitional change of becoming a circular business, our commitment to the Climate agreement (SDG 13) and our continuous work of improving production in becoming more sustainable by reducing its environmental impacts and becoming a great place to work by providing decent work (SDG 8).

Situation

Becoming a circular business is a transformational change for IKEA and one of its biggest ambitions and challenges for the future.

It will impact the business in all aspects: from how it develops products, source materials, develop the IKEA supply chain, and set up logistics, to how and where it meets its customers. This will enable IKEA to prolong the life of products and materials.

Strategy

To make this a reality, we must design all of our products from the very beginning to be repurposed, repaired, reused, resold or recycled. It's about seeing our products as raw materials for the future and eliminating waste across the entire value-chain using renewable, recycled, efficient and innovative materials and technologies.

Results and impact

Wood as a material fits perfectly into the scope of circular design and IKEA believes that wood will continue to be an important material in order for IKEA to succeed with the circular vision.

Moreover, IKEA also sees that by combining the design capability of durability with the right wood species (based on rotation time) it has an opportunity to really contribute to the

climate agenda by using its products as carbon storage and therefore contribute in fulfilling a climate positive agenda.

In addition, IKEA will continue to have an everincreasing role to develop the industry and production that it is reliable on.

Social Impact - IKEA will continue to work on our ambition to create decent work with IWAY as its guiding tool. IWAY is IKEA's **Code of Conduct** for suppliers of products, materials and services to IKEA. It defines the minimum requirements on suppliers and service providers for Environment and Social & Working Conditions. IKEA also uses IWAY in its work to further secure our sub supply chain. Moreover IKEA sees the importance being involved in securing fair & living wages, taking the lead in responsible recruitment of migrant workers and supporting young workers. IKEA also works closely with its suppliers to promote community engagement.

Environmental Impact - IKEA recognises that it will have a role to continue on the path of developing and innovate with our partner's resource efficient production techniques. "Making more from less" is in IKEA's DNA but has to be empathised even further as we also continue to make the production more efficient with regards to energy, waste and water management.

Maybe IKEA most important initiative is that we will start communicating much more with our customers to create awareness on how we together are contribution to a positive impact on people, society and planet.

Challenges and lessons learned

Cooperation, partnership and stakeholder engagement is key to success while sharing an open and change driven agenda.

Contact

Name: Jeanette Ulfshög Martinie

Organisation: IKEA

Case study // Round Table SDG 15: Sustainable Forest Management and the SDGs

Carbon forests - a natural solution to enhance climate change mitigation efforts

The State Forests, Poland

Level: subnational

Summary

Carbon forests is the Polish State Forests' innovative project for climate protection. Its primary aim is to promote the contribution of forests as one of the most cost-effective ways of reducing the concentration of greenhouse gases in the atmosphere. Specific management practices have been employed in order to enhance carbon stock in forests and to maximise the accumulation effect without causing any harm to biological diversity or to the water retaining function of forests. These include, for example, developing multi-annual programs for rebuilding forest stand species composition and silviculture methods aimed at shaping their multi-layer structure. The experimental activities have been introduced in 26 forest districts and carried out on the total area of nearly 12,000 ha. As a result, additional amounts of organic carbon will be captured and offered for sale by the State Forests at a trading auction for those who would like to support activities aimed at reducing greenhouse gas emissions. The project is planned for 2017 – 2026 and involves many partners, including practitioners, researchers and companies from the energy sector that are interested in purchasing CO2 units.

Situation

The State Forests National Forest Holding (SFNFH) of Poland plays a major role in ensuring the sustainable management of forests, which means that provision of non-productive functions of forests should go hand in hand with the supply of wood and a variety of other social and environmental services, whenever possible in a balanced way. At the same time, the organization dedicates a large part of its activities to raising public awareness of environmental concerns. Established in 1924, it takes care of over three-fourths of Polish forests today (7.6 of 9.3 million hectares) on behalf of the State Treasury. Its main mission is to manage national forests in a way that guarantees their preservation, protection and growth of their resources. The organisation is underpinned by two key principles: the three-tiered structure and the self-finance status. At the base of the management structure of the State Forests are 430 forest districts. At the next level, there are the 17 regional directorates of the State Forests. At the top of the organisation is the Director-General of the State Forests and their office, the Directorate-General.

Strategy

The Carbon Forests project aims to promote the effectiveness of its approach and to discuss the most cost-effective policy options to reduce greenhouse gas concentration in the atmosphere. A number of alternative approaches to utilizing forestry and forest management for carbon sequestration are examined, including the following phases of the project:

- Development of research on managing forest carbon and greenhouse gas balances;

- Determination and implementation of additional measures to be carried out on the plots included in the Carbon Forest project;
- Implementation and evaluation of additional forest management activities to enhance carbon stock in forests;
- Implementation of a system of estimating the amount of carbon in the ecosystem (CBM);
- Establishment of the forest carbon market;
- Creation of an on-line trade auctioning system (CO2 Portal);
- Development of a monitoring system for measuring the role of forests in storing carbon;
- Development of the Information Campaign.

Results and impact

This project serves as a basis for the implementation of additional measures aimed at enhancing carbon stock in forests. It will help to quantify the consequences of different forest management practices and operations in order to promote and test forest management activities that contribute to the enhancement of mitigation efforts. These should serve equally as an 'adjustment' of forest ecosystems ahead of forthcoming climate change, as well as the growing need to treat forests as a natural reservoir of organic carbon. The ongoing research will improve the methods and procedures for estimating carbon dioxide absorption. The end result will be Carbon Budget Model to calculate carbon stocks changes and prognoses, scenarios assessing the impact of forest management activities so as to support operational planning. The State Forests will run a voluntary on-line auctioning system for CO2 credits, which allows individuals or entities to join in the efforts in favour of climate. The funding is to be spent on activities in support of nature and protected species conservation measures indicated by the donors.

Challenges and lessons learned

The project is funded by the State Forests and requires long term planning and contributions of different partners, including the Forest Research Institute, the Bureau for Forest Management and Geodesy.

Potential for replication

It is expected that the results of the Carbon Forest project can be eligible for wider dissemination at the national and international levels. The experiences of 26 forest districts can be assessed and transferred to an overall guidance for the State Forests managing principle. Poland takes this opportunity to promote the contribution of forests as one of the most cost-effective options to reduce the concentration of greenhouse gases in the atmosphere in line with the Paris Agreement, which encourages parties to initiate adequate actions to increase the greenhouse gas absorption capacity of forests.

Contact

Name: Mr. Tomasz Zawiła-Niedźwiecki, Deputy Director General of the State Forests

Organisation: Directorate-General of the State Forests, Poland

Case study // Round Table SDG 15:
Sustainable Forest Management and the SDGs

**INTEGRATE – A European-wide network to enhance nature conservation in
sustainably managed forests**
European Network Integrate
Level: regional, sub-regional, national

Summary

Integrated forest management represents a key strategy to further integrate nature conservation objectives into the practical implementation of Sustainable Forest Management (SFM). In the framework of the EU Forest Strategy and its Multiannual Implementation Plan, with reference to lessons-learned and outcomes of the INTEGRATE/ INTEGRATE+ studies of the European Forest Institute (EFI) and based on the Prague Declaration on Forests signed by the Czech Minister of Agriculture, Mr. Jurečka, and by the German Federal Minister of Food and Agriculture, Mr. Schmidt, at the Conference in Prague in October 2016, the two ministers invited for the establishment of a voluntary cross-border network on the further integration of nature conservation enhancement in sustainably managed forests in Europe. The objective of the European Network Integrate is to promote and advance forest management approaches as related to the integration of nature conservation in SFM at three levels: policy-making level; forest practitioners and managers; and research and academia. The network presently includes 15 states and the European Commission. EFI facilitates the network's activities in the framework of its project InForMAR funded by Germany.

Situation

There is a rich tradition of integrative approaches at the forest practice level across Europe. In the last decades, new concepts have been developed and implemented throughout different parts of the Pan-European region. Yet, despite this positive trend, the potential to integrate nature conservation and wood production under changing socio-economic and environmental driving forces is subject to ongoing political and scientific debate. For instance, the question of how nature conservation objectives and wood production can be combined under changing climate conditions and increasing risks would be fundamental to address. Moreover, barriers exist in the science-policy-practice interface as regards integrated forest management approaches. There is consequently a need to demonstrate the potential of these approaches to policy makers, backed up by scientific findings. It would also be relevant to initiate mutual learning related to the prospects of integrated forest management approaches amongst policy makers, administration, practitioners and scientists.

Strategy

Objectives and tasks

- Promote cross-border and cross-sectoral learning and cooperation on innovative and successful approaches to further integrate nature conservation, especially the maintenance and enhancement of biological diversity, into sustainable forest management practices.
- Offer an active interface between research/academia, policy, administration and forestry as well as nature conservation practitioners.
- Provide a platform for on the spot (forest) discussions of demands of nature conservation, including opportunities to reconcile and combine them with other forest functions and vice versa.
- Promote transfer of knowledge and capacity building on integration in all sectors involved.

Working modus

- Regular meetings once a year or irregularly for specific reasons (on invitation and hosted by members).
- Meetings in conjunction with on the spot forest visits and practical demonstrations.
- Regular feedback/reports to the Standing Forestry Committee and other European fora.
- Networking – to the extent feasible through national focal points.
- Promotion of cross-border expert visits and exchanges.
- Joint projects as needed and supported.

Member's contributions

- The network is voluntary, works on an informal basis and builds on effort-sharing.
- States members participate as they like and establish focal points at their responsible forest administrations.
- The European Commission as well as national and international research institutes that have relevant projects running in Europe can also join the network, share their expertise and contribute to the discussions.
- Each member state establishes at least one demonstration site in typical managed forest types for innovative and successful integration of nature conservation and offers an expose on it.
- Member states are invited to stand ready for hosting expert meetings on the (forest) spot as needed, following an effort-sharing approach.
- Member states are invited to promote the participation of national experts from science, administration, policy and practice in such meetings and in online-dialogues.
- All members are invited to contribute to joint reporting and feedback.

Results and impact

At the moment, there are 42 forest demonstration sites (so-called Martescopes) established in 10 European states. These Marteloscope sites are fully inventoried forest plots that allow for practicing a decision making “on the ground” with regard to wood production and forest biodiversity protection. The focus of the latter is on habitat trees and microhabitats. A modern software allows to carry out various simulations, taking into account both economic and ecological value of individual trees. The sites are currently used for forest management training and education, research, but also to allow concrete forest management related debates between policy or decision

makers. Specifically with regard to the latter, the network has shown to be suitable for conducting well-informed policy debate and solving forest-related conflicts on the ground. The network of forest demonstration sites has been currently quickly increasing with regard to the number of sites and the functionality of the network. The network is coordinated by EFI within the InForMAR project, a project that also facilitates the European Network Integrate. The catalogue of microhabitats, that is essential to the network's model of integrated forest management, is meanwhile available in 10 languages. The concept of integrated forest management is also explained in a movie: <http://www.integrateplus.eu/>.

Challenges and lessons learned

Nature conservation is already an important objective in most sustainably managed forests in Europe. Foresters are however facing a growing demand to increase nature conservation as well as the request to leave more forests unmanaged. These demands, the latter in particular, are nevertheless very difficult to combine with other societal demands placed on the forests, as well as, in many cases, forest owners' perceptions and intentions. Moreover, as science tells us, setting aside managed forests is not always the best way to protect species and habitats in the European cultural landscapes. There is furthermore the urge to increasingly bring European forest management in line with climate change adaptation.

INTEGRATE can help to build bridges between different parties. It explores the potential to enhance nature conservation in a most effective and efficient way, "integrating" it with other demands towards forests. Many best practise examples already exist throughout Europe from which we can learn, including the translation of success stories and lessons-learned to other forest-related situations.

Integrative approaches can maintain and enhance forest-related biological diversity with respect to the historical, multifunctional and professionally managed forests in Europe. It offers win-win solutions (supporting both the bioeconomy and biodiversity), cost-efficiency and low impact on public budgets, possibilities of a large-scale application, respect to local economies and making use of traditional forestry technics.

Our vision is that:

- The European Network Integrate involves all EU Members States, relevant European Commission services and new non-EU countries.
- The European Network Integrate is a well-known and respected platform for building consensus on balancing bioeconomy and biodiversity enhancement in forests and on integrating nature protection into sustainably managed forests.
- Integrative approaches are widely accepted both by forest owners/managers and by nature protection community.
- The methodology is further elaborated and simplified so that it can be easily applied by forest owners.
- The data collection methods on the Marteloscope demonstration sites, including the monitoring of tree microhabitats, are the basis for designing biodiversity related payments for forest ecosystem services or rural development forestry measures.
- The European Network Integrate is dynamic enough to provide professional support to its members or various stakeholders upon request.

Potential for replication

The project offers standardized tools (Marteloscope demonstration sites, catalogue of microhabitats, software) which can easily be used in various forest types across Europe and at the same time an open forum for exchange on other approaches to integrate nature protection into sustainably managed forests. One of the basic working methods is cross-boarded expert exchanges which serve to spread the knowledge. It has potential to be replicated also outside Europe at least in boreal and temperate zones.

Contact

Name: Mr. Tomáš Krejzar

Organisation: Ministry of Agriculture of the Czech Republic, Forestry Section

Email: tomas.krejzar@mze.cz

Case study // Round Table SDG 15: Biodiversity at the Heart of Sustainable Development - Toward Transformation and Resilience

Earth Observation technologies designed for action

Georgia

Level: national

Summary

Global Forest Watch (GFW), is a web based platform that provides data and analysis tools to monitor forests and detect unsustainable activities. Georgia is also developing Data Cube technology, a monitoring tool (impact assessment, change detection) to help mainstream biodiversity and integrate environmental policies into the political agenda.

Situation

The Ministry of Environment Protection and Agriculture together with World Resources Institute (WRI) are carrying out the GFW project in Georgia, funded by GEF. The project is being implemented together with GIZ and Caucasus Environmental NGO Network.

Unique GFW technology developed by WRI is used worldwide to analyse and report on forest loss, forest and land degradation, illegal logging, biodiversity, etc. The data is constantly updated on the global web portal (<http://www.globalforestwatch.org>). GFW is free and simple to use, enabling anyone to create custom maps, analyse forest trends, subscribe to alerts, or download data for their local area or the entire world.

A national web portal (<http://geo.forest-atlas.org/>) is currently being established in Georgia, where all nationally and globally relevant data including forest inventories and forest management plans, as well as other data on the use of natural resources and land use, are integrated and visualized using this unique technology. The portal's user-friendly tools allow users to easily share information and provide on-the-fly analyses, which will run in English and Georgian languages. The technology will allow visualisation and qualitative/ quantitative analysis of current status of Georgian forests and will fill in informational and analytical gaps, promoting better decision-making, monitoring and forest rehabilitation in the forest landscapes of Georgia.

Strategy

Global Forest Watch in Georgia is using a "bottom up" approach by engaging with stakeholders who would be users and beneficiaries of the web portal to identify gaps in existing data and to understand data utilization at cross-sectorial levels for improved actions and decisions in forest and land use planning. Next, existing local and national data was collected and cleaned or new data developed to be integrated into the web-based "Forest and Land Use Information Decision Support" (FLUIDS) system. FLUIDS is based on already existing GFW technology and global data and provides on-the-fly analyses, which provide insights into the state of Georgia's forests and help Georgia report on its international commitments. Capacity building is a major component of the project to ensure long term sustainability, maintenance and relevance of the web portal and includes awareness raising and public communication.

Results and impact

The actions supported the improved cooperation between governmental, non-governmental and scientific institutions, resulting:

- High level commitment and cross-sectorial support for utilization of up-to-date and accurate data in decision making; Processing and visualization of existing data-sets for improved monitoring of forest landscapes and biodiversity;
- Compelling analyses for improved decision making to support sustainable management of forested landscapes and biodiversity;
- Enhanced knowledge to map, plan, and analyze risks in forest habitats in accordance with European EUNIS classification system;
- Increased capacity and tools to create thematic maps out of the forest inventory (& management plans) data-sets;

Challenges and lessons learned

Main challenges of the project in Georgia include:

- A lack of capacity and an insufficient number of qualified specialists within partner agencies and organizations
- Unsustainable use of natural resources
- Institutional instability that significantly slows down development processes.

To address these challenges, significant effort was applied to strengthen the coordination between stakeholders. The project took a participatory approach to identify the key Indicators to collect applicable data and improve measuring the level of “maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems” towards Sustainable Forest Management. In addition, the project created a technical working group that allows for direct ownership over project outcomes and capacity building workshops are being developed to increase knowledge on use and maintenance of the portal.

Potential for replication

The experience described above can be replicated and implemented throughout the South Caucasus and Central Asian countries with similar socio-economic conditions, including high demand on natural resources and low capacities at administrative levels of law enforcement in the field of forest ecosystems, including the lack of experience in utilizing the web based geographic information and decision support tools.

Contact

Name: Mr. Gigia Aleksidze, Project Manager in Georgia, World Resources Institute.
Organisation: Ministry for Environment Protection and Agriculture of Georgia.

Case study // Round Table SDG 15: Biodiversity at the Heart of Sustainable Development - Toward Transformation and Resilience

Expanding Protected Areas in the Balkans The Former Yugoslav Republic of Macedonia

Level: subnational

Summary

FYR of Macedonia is carrying out a valorisation study of the natural values of Shar Mountain, one of the main biodiversity hotspots on the Balkan Peninsula. The study will provide analysis of all available environmental, territorial and socio-economic information, including recommendation for category of protection, proposed zoning and management options. It is one of the key documents to initiate the process of proclamation of an area and achieve protection category - national park. With its proclamation, Shar Mountain will finally receive its long awaited and real position on the map of protected areas worldwide, thus contributing both to natural protection and socio-economic development of the entire region.

Situation

Covering only 5% of the Balkan Peninsula, FYR of Macedonia displays a wealth of biodiversity and accompanying ecosystem services which can be considered a significant concentration of natural capital for the nation's sustainable development path. The FYR of Macedonia, although a small country, due to its climatic and topographic and geographic variety, has a disproportional number of habitats and species of regional and European importance. With estimates of 35% - 43% of the nation under forest, the country contains more than 16 000 wild species in several groups: bacteria, lichens, fungi, mosses, higher plants, invertebrate and vertebrate animals, 853 of which are endemic.

Shar Mountain has been recognized as one of the main biodiversity hotspots in the Balkan Peninsula, and it has been designated internationally and nationally as priority for protection. The need for its protection has been recognized nationally with many planning documents, including the National Spatial Plan, First National Biodiversity Strategy with an Action Plan, Second National Biodiversity Strategy and Nature Protection Strategy (at the moment, both pending for adoption), National Water Strategy, etc.

Geographically spreading over the territory of three countries, FYR Macedonia, Albania and Kosovo (Under UNSCR 1244/99), Shar Mountain is positioned as a biodiversity "hot spot" not only on the Balkans, but would be one of the largest protected areas in Europe. In 2006, through the Dinaric Arc Initiative with the support of ADA and CDA, UN Environment lead a project on the protection of natural values in the Balkan region and improved management of transboundary areas. A methodology for identification of transboundary areas (protected or worth for protection) was developed, based on which, in cooperation with local experts, feasibility studies for three priority areas have been prepared, including Shar Mountain-Deshat-Korab. In addition, Shar Mountain has also been proposed as one of the areas that require further research to be possibly included in the future Natura 2000 network.

Following the importance of Shar Mountain on local, regional and international level, as well as the priority of the country to increase the network of protected areas, with support of the Global Environmental Facility (GEF), UN Environment Vienna Programme Office in cooperation with the Macedonian Ministry of Environment and Physical Planning have received and are currently

implementing a full-size project “Achieving Biodiversity Conservation Through Creation and Effective Management of Protected Areas and Mainstreaming Biodiversity into Land Use Planning”.

Strategy

The main project objective is to support the expansion of national protected areas system and enhancing capacity conditions for effective management and mainstreaming of biodiversity into production landscape.

Within the scope of the first project component “Increase of Protected Area(s) Network”, a consortium of partners has been engaged, Tetovo State University-Institute of Ecology and Technology (located on Shar Mountain) and University “Ss. Cyril and Methodius” Skopje, Faculty of Natural Sciences and Mathematics, to implement and develop a full study for valorisation of the natural values of Shar Mountain. The purpose of this study is to present in a consolidated manner all relevant information for designation of Shar Mountain, including detailed analysis of all available environmental, territorial and socio-economic information pertaining to the envisaged protected area, and develop a strategy for protection including precise zoning and management options.

Results and impact

The specific aims of this study are:

- a) To provide scientific data of the current state of the environment for the envisaged protected area,
- b) To provide analysis of current state of socio-economic trends and provide viable options for the local communities,
- c) To develop a strategy for protection, including territorial zoning and proposed recommendations for the category of protection,
- d) To contain all necessary information required under the national legislation.

The study will be subject of discussion with relevant stakeholders, and local communities through workshops and public hearings, at which the target area of protection will be identified, based on the developed criteria for prioritization of proclamation of PAs. All meetings and developed documents will take into consideration gender equality, as well as appropriate involvement of vulnerable groups and all ethnic groups represented in the country.

The developed methodology and the experiences gained with it will be well documented, so that it can serve as reference for broader and more systematic future reporting and studies required. Most importantly, the valorisation study is one of the key documents required for initiation of the official process of proclamation of Shar Mountain under protection category-national park.

With this, Shar Mountain will finally receive its long awaited and real position on the map of protected areas worldwide, thus contributing both to natural protection and socio-economic development of the entire region.

Challenges and lessons learned

Natural values on Shara are under great anthropogenic pressure causing numerous threats that lead to degradation of such values, including:

- Habitats conversion
- Loss or degradation of habitats or even entire ecosystems
- Habitats fragmentation
- Disturbance of ecological processes in the ecosystems
- Change or disturbance of mutual relations in the bio-cenosis
- Loss of species or reduction of population,
- Landslides, rock-falls, degradation of landscapes and geo-values, etc.

Following Shar Mountain importance on national and international level and in order to avoid or reduce to minimum any future degradation of its natural values, through the project, the country

is taking real actions for its immediate protection under the category-national park and proper future management of Shar Mountain.

Potential for replication

The developed methodology and the experiences gained through the preparation of the valorisation study, can serve as a reference for broader and more systematic future reporting and studies required. It will also serve as a possibility to identify possible activities in the region that on one hand will support the life of local communities in terms of socio-economic development, and on the other, will be in line with the national priorities and principles for nature protection and conservation.

Contact

Name: Ms. Ljubica Teofilovska

Organisation: Ministry of Environment and Physical Planning, The Former Yugoslav Republic of Macedonia

Case study // Round Table SDG 15: Biodiversity at the Heart of Sustainable Development - Toward Transformation and Resilience

Sustainable tourism development through the Carpathian Convention

Poland

Level: national

Summary

Through the project Carpathians Unite, the provisions of the Protocol on Biodiversity and the Protocol on Sustainable Tourism of the Carpathian Convention have been promoted in the Polish Carpathians. The project aimed to protect the biological and landscape diversity of the Polish Carpathians. It combined conservation efforts, sustainable land use, the preservation of traditional land use and local livestock breeds with activities that promote sustainable tourism.

Situation

The Carpathian region represents one of the most biologically outstanding ecosystems in the world covering a total area of about 190 000 km² and inhabited by more than 17 million people. Shared by seven Central and Eastern European countries: the Czech Republic, Hungary, Poland, Romania, Serbia, Slovakia and Ukraine, the Carpathians constitute Europe's second most extensive mountain range after the Alps and consist of a myriad of natural landscapes of great ecological value. The region is also crucial source of freshwater. In addition to three major rivers: the Danube and Dniester, flowing into the Black Sea and the Vistula, which flows into the Baltic Sea, its numerous lakes and water reservoirs supply clean water for communities, including for agriculture and industries. The Carpathians, as the green heart of Europe, host the continent's most significant areas of virgin forest and natural forest, and provide habitats for endemic species and Europe's largest wolf and brown bear and lynx populations. The Carpathian area is a living environment inhabited by millions of people, but is subject to a variety of threats and adverse impacts from land abandonment, habitat conversion and fragmentation, deforestation, climate change, and large scale migration to industrialization, pollution, and exploitation of natural resources.

In response to these hazards and challenges, the seven Central and Eastern European countries established an intergovernmental treaty pursuing comprehensive policy and cooperation in order to guarantee protection and sustainable development of the Carpathians, namely the Framework Convention on Protection and Sustainable Development of the Carpathians⁴ (Carpathian Convention) in 2003, in force since 2006. It is the only multi-level governance mechanism covering the whole of the Carpathian area and besides the Alpine Convention the second sub-regional treaty-based regime for the protection and sustainable development of a mountain region worldwide.

The common vision of the Parties to the Carpathian Convention is to guarantee protection and sustainable development of the Carpathians. The improvement of the quality of life, the strengthening of local economies and communities, and the conservation of natural values and cultural heritage should go hand in hand in the Carpathian area. The Convention provides a framework for cooperation and multi-sectoral policy coordination, a platform for joint strategies for sustainable development, and a forum for dialogue between all stakeholders involved – from the local communities and various NGO's up to the regional and national Governments, Institutions of the European Union and the United Nations.

⁴<http://www.carpathianconvention.org/text-of-the-convention.html>

In Poland, the Carpathian region comprises ca. 6% of the land area of the country in three regions: Małopolskie, Podkarpackie and Śląskie; it includes mountains, foothills, as well as valleys and mountain basins. In comparison with other regions of the country, the Carpathians are distinguished by a low degree of urbanisation and industrialisation, extensive forests and traditional farming. More than a half of this area is covered by at least one area-related form of nature protection, which is proof of the immense natural wealth of this part of Poland. The natural value of Polish Carpathians is emphasised by the fact that there are as many as 6 national parks (Babia Góra, Gorce, Tatra, Pieniny, Magura and Bieszczady) and 13 landscape parks belonging to the Carpathian Network of Protected Areas, supplemented with 7 protected landscape areas, which gives a total of almost 70% of the Polish Carpathian area covered with one of the aforementioned forms of nature protection. Natural areas were preserved mainly in regions, which have for a long time been covered by nature protection, or are particularly difficult to access due to their topography, which is crucial for preserving many rare and endangered ecosystems and species, particularly those characterised by an endemic distribution. On the other hand, in more accessible areas, where silviculture and agriculture are maintained, many semi-natural habitats developed, including open habitats with extensive ecotone zones, of significant importance for preserving biological and landscape diversity of the Carpathians.

Strategy

The Carpathian Convention established numerous thematic working groups, which consist of representatives of governments, national experts, and representatives of civil society, non-governmental organizations and various other relevant stakeholders. The governments consider work concocted by the working groups. These working groups are responsible for elaboration of the thematic Protocols to the Carpathian Convention, which provide provisions that are more specific. Until now, the following five thematic Protocols have been elaborated and adopted:

- Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity (Protocol on Biodiversity) (2008)
- Protocol on Sustainable Forest Management (2011)
- Protocol on Sustainable Tourism (2011)
- Protocol on Sustainable Transport (2014)
- Protocol on Sustainable Agriculture and Rural Development (2017)

The thematic Protocols have been ratified by most Carpathian countries, and Poland has been giving a good example by undertaking concrete actions implementing their provisions. It is well demonstrated by the project "**Carpathians Unite – mechanism of consultation and cooperation for implementation of the Carpathian Convention**"⁵ that has been implemented by the project consortium led by the UNEP/GRID-Warsaw Centre (www.gridw.pl). The project was co-financed by Switzerland under the Swiss-Polish Cooperation Programme.

The project's main goal was to protect the biological and landscape diversity of the Polish Carpathians by supporting the implementation of the provisions of the Carpathian Convention, especially the Protocol on Biodiversity and the Protocol on Sustainable Tourism. It combined conservation efforts, sustainable land use, the preservation of traditional land use and local livestock breeds with activities that promoted sustainable tourism development, increased public participation in the implementation of the convention, and provided information on the natural and cultural heritage of the region.

⁵ <http://en.konwencjakarpacka.pl/>

Results and impact

The objectives of the Carpathians Unite project were achieved by:

- **maintaining and developing traditional sheep grazing in mountain pastures and semi-natural meadows**, protecting traditional breeds of livestock and supporting the revival of the pastoral tradition;
- reducing the negative impacts of tourism on natural areas by drafting a **regional sustainable tourism development strategy** for a selected part of the Carpathians;
- **improving access to information on the Carpathians**, their natural and cultural heritage, tourist infrastructure and actions undertaken for the implementation of the convention by launching the web portal "Carpathian Informatorium" to present data on the Polish Carpathians using geoinformation techniques, and by conducting a series of trainings and lectures;
- creating a network for information exchange among institutions and bodies working for the implementation of the Carpathian Convention; and
- ensuring public participation in the implementation of the Carpathian Convention by creating a wide platform for public consultation and support for thematic working groups.

One very tangible result of the project is the elaboration of "**The Strategy for the sustainable development of tourism in the Magical Land of Lemko and Pogorzanie in the years 2015-2020**" that was developed with the participation of 38 neighbouring Carpathian municipalities. Its geographic range covers the area of 3 550 km². The strategy defines 5 priority areas and translates them into strategic goals and programmes that are intended to support their achievement. This way it constitutes a useful tool for local municipalities that helps them to apply the rules of sustainable tourism in fragile Carpathian ecosystems.

Challenges and lessons learned

Main challenges encountered during project implementation included:

- i) ensuring efficient cooperation between Carpathian stakeholders,
- ii) insufficient institutional frameworks to effectively cope with development needs and conflicts (development strategies, land-use planning).

Lessons learned:

- i) coordinated activities prove effective and have a potential to bring synergy effects if there is sufficient engagement and cooperation between stakeholders,
- ii) sustainable development should be adequately addressed in the policy frameworks, strategy and planning documents.

Potential for replication

Coordination and cooperation mechanisms applied in a multi-stakeholder settings can be used elsewhere. Sustainable tourism development strategy as well as best practice in land-use planning could well serve as model solutions.

Contact

Name: Gabriela Szuba

Organisation: Ministry of the Environment, Poland