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Final Report

EXTERNAL REVIEW ON

"RESTORATION OF GOLEMA RIVER PROJECT, PHASE 1 AND PHASE 2"

Contents

EXECUTIVE SUMMARY

The external evaluation of Restoration of Golema River Phase I and II has been conducted in the period of Nov-Dec 2011. It consisted of analysis of project documentation, site visit during which inspection of interventions has been made, interviews with stakeholders, and finally, drafting of the Evaluation Report.

Overall, it can be concluded that the Restoration of Golema River Project Phase I and II have achieved the planned objective, and contributed to improvement of Golema River corridor and the environment.

The overall project management arrangements have been positively assessed. The strategy of intervention has been appropriate, selection of stakeholders comprehensive. Project implementation with PIU operating under UNDP rules and procedures, and the direct execution modality (DEX), although sometimes time-consuming and convoluted, have proven robust and effective. Approaches used in resolving issues, complex technical designs and large scale construction procurements have been effective.

Comprehensive analysis of Golema River catchment has been made, identifying major environmental problems, as well as suggesting solutions. Most effective of the proposed measures have been selected and implemented. Besides restoration/rehabilitation of parts of the river corridor in the urban and rural areas, issues of solid and pesticide waste, as well as sewage and rainwater discharges have been tackled. In the course of the project implementation, due attention has been paid to strengthening of the capacity of Resen Municipality, CSOs and NGOs, and to public awareness raising. Ecosystem oriented river restoration measures have been demonstrated. As a result, part of the river has been rehabilitated, pollution reduced, overall capacity and awareness in the region improved. Project interventions are visible regarding the riverbed and wastewater and waste management. Improvement of water quality in Golema Reka and eventually, Lake Prespa, cannot be quantified due to lack of comparable 'before and after' monitoring data.

The Project has been implemented within the planned budget, with modifications due to justified prioritization of most cost-effective activities. Additional works have been added as a result of savings and favorable exchange rates.

Reporting and communication among key stakeholders has been commendable. Appropriate visibility of Golema River Project, as well as the donor and implementing agency has been achieved.

Further sustained efforts have to be made for institutional capacity building at national and local levels in Macedonia for sustainable management of water and environmental resources. Although it greatly exceeds the scope of any one project, it has to be taken into account in future projects' design.

Lesson learnt and further recommended:

a) Careful and realistic planning of complex activities, taking into account the stakeholder capacities, legal requirements and procedures is essential for timely project execution;

b) Use of external independent experts for resolution of complex technical and contractual issues proves to be valuable;

c) Project Implementation Unit (PIU) composed of competent professionals and operating under sound set of rules and procedures is a form that may overcome legal and institutional capacity deficits, whilst achieving the project objectives;

d) Due attention has to be paid to future financial and institutional sustainability of project interventions and further capacity building in the area of water and environmental management.

The objective of the Project has been defined as follows: ***To improve the environmental status of Golema river.*** The project achieved the following:

- Elaboration of Assessment and Management Plan

Seven reports have been prepared: Task 1. Restoration of the Riverbed Riparian Corridor; Task 2. Mitigation of the Solid Waste and Wastewater Pollution; Task 3. Improvement of the Wetlands Condition; Task 4. Improvement of the Forest Cover and Mitigation of Erosion; Task 5. Mitigation of the Problems Related to the Current Land use; Task 6. Improvement of River Monitoring; and Task 7. Public Awareness Raising.

It can be concluded that the detailed assessment & reports, besides formulating the management plan and propose activities, have 1. Provided in-depth knowledge on environmental issues in the region and raised awareness, 2. Encouraged further actions and projects, and 3. Introduced the approach of Integrated River Basin Management and set an example of river corridor restoration measures.

For construction works (river restoration and regulation) also detailed technical designs & reviews were made according to Macedonian regulations.

In Phase II, activities identified as priorities were continued. Namely, the measures concentrated on achievement of the overall objective.

- Removal of solid waste from riparian corridors

Support to overall solid waste management in the region has been significant. Besides improved collection, improved capacity of PE "Proleter", also the public awareness and attitude have been changed to the better. Introduction of solid waste collection charge adds to sustainability of the system.

- Restoration of stream habitat and riverbed morphology

Assessment studies and proposed measures served as basis for preparation of detailed technical designs for restoration/regulation measures.

In total 640 m of the urban riverbed has been regulated in Resen. In addition 300 m have been restored with environment friendly measures in rural area near village of Jankovec.

The quality of construction has been up to the required standards. Complete restoration of the river corridor has not been possible within the scope of the Project. Sustained efforts are needed in the future to carry out considerable amount of work for full restoration.

- Strengthening of the capacities of the Municipality of Resen regarding river management and sustainable management of the restored sections of the river

The capacity of the MoR has been significantly increased in the last few years with donor financed projects. Additional strengthening is needed in order to enable it to independently implement large-scale and financially demanding projects. Further sustained efforts have to be made especially in the water management sector. Regarding project implementation capacity, gradual integration of future PIUs into the administration structure is deemed as promising model.

New decentralization phases are seen as possibility to increase financial base of the MoR.

- Increase of public awareness for the importance of the river restoration

The situation with public awareness in the region has been significantly improved in the last few years, as is the situation with solid waste management, pesticide packaging and other environmental issues. Improvement cannot be attributed to one project only, but it probably represents the combined overall positive impact of donor supported projects in the region.

- Finalization of the construction works for restoration of Golema River in the urban section

Construction works on the urban part of Golema (420 m) have been completed according to the adjusted plans. Additional restoration of 160m of the riverbed has been completed in Phase II. The quality of works has been up to required standard and according to Macedonian legislation.

In addition, additional 60 m of the riverbed have been restored, to provide a regulated/controlled transition between regulated urban and the unregulated part of the riverbed and provide additional flood protection.

Overall, the restoration/regulation works ensured that the town of Resen and its broader area are now safe from potential floods. In addition, the regulation enabled construction of a communal waste-water collector pipeline connected to WW network/collector discharging into WWTP Ezerani for treatment prior to being discharged into Golema Reka at Ezerani, and eventually, to the lake.

- Completion of the sewerage system along the river

In Phase II a waste-water collection pipeline (along the restored river-flow), in a total length of 685m has been constructed. Stormwater discharge pipelines have been separated and are now discharged into the regulated riverbed.

Construction of the complete eastern collector (850 m) and partial construction of 400 m of the western collector in Dolna Bela Crkva contributed to the improvement of public health and the environmental status of Golema Reka and all natural resources.

- Demonstration of ecosystem oriented river restoration in rural areas

Ecosystem oriented riverbed restoration measures have been carried out located outside the populated area of Jankovec in total length of approximately 300 m. UNDP also supported the preparation of a riverbed restoration/riverbed engineering manual, which outlined the latest state-of-the-art integrated ecosystem approaches for riverbed restoration/river engineering. This manual was used as a guiding document for designing and implementing all the key ecosystem oriented measures in the case of the Golema Reka River.

- Support in the establishment of an efficient and sustainable pesticide packaging waste management system at municipal level

A system for pesticide packaging waste management on the entire territory of the Resen Municipality has been developed, consisting of one central station and four (4) pesticide packaging transfer stations, managed by PE "Proleter". It is in operation and has achieved positive results.

Some issues regarding future sustainability of operation & maintenance costs have to be resolved in the future.

At the moment a Biodegradable Waste Management System Project is being implemented. The positive experience from PPWMS, as well as BWMS, when implemented, may serve as a model for replication in other parts of the country which are facing similar problems

- Establishment of a monitoring system for targeted parameters.

The construction of the premises of the meteorological and hydrological stations in Phase II allowed for the installment of the automatic hydrological and automatic meteorological stations which were procured previously, in the earlier

stages of the project. The Station significantly contributes to the capacities of the national institutions responsible for the environmental monitoring of the Prespa Lake basin, and enable regular monitoring of the river, collection of data and provision of reliable information for future decision making processes. The station has not yet been handed over by MoR to National Hydromet Service.

Overall, it can be concluded that the Restoration of Golema River Project Phase I and II have achieved the planned objective, and contributed to improvement of the Golema River corridor and the environment.

1. BACKGROUND

Golema Reka is the largest and the most important river in the Prespa Lake watershed with total catchment area of 162 km^2. It covers wide range of different areas from mountainous to lowland wetlands in the delta area. Its spring is near the village of Krusje while its delta is placed in the strict nature reserve Ezerani, which is the only Ramsar site in Macedonia.

The main environmental problems related to the current status of the river ecosystem include decline of water quantity, deterioration of water quality, reduction of biological diversity, surface erosion and sediment transport, flooding of agricultural land due to damaged riverbed etc.

During 2005 - 2006, the UNDP/SDC project "Support to extension of the solid waste management service in the rural communities of the Prespa Lake watershed" was implemented.

The first phase of the project "Restoration of the Golema River" started in September 2005, It is also part of the UNDP GEF full size project "Integrated Ecosystem Management in the Prespa Lakes Basin of Albania, Macedonia and Greece".

In the first phase of the project "Restoration of the Golema River" which lasted from September 2005 to October 2009, a thorough assessment of the key adverse impacts to the river ecosystem, including their underlying causes was conducted. With the available project budget, approximately 460 m of length of the river bed were restored, out of 1'000 m total length of the river in urban section. The list of measures and activities implemented within the project includes: forestation of eroded land, cleaning of drainage channels as a flood control measure, purchase and installation of hydrological monitoring equipment (with same technical specification as monitoring stations from the River Monitoring System (RIMSYS) project and included in the data collection system) and public awareness campaigns.

The second phase of the project (from September 2008 to October 2011) is a follow-up of the activities designed and partly implemented within the first phase of the project, focused mainly on measures and activities, previously prioritized by the key stakeholders. Interventions in the river bed included additional restoration of 160 m in the urban area, construction of 1'600 m sewage collector, restoration of the river bed within the boundary of the urban and the non-urban section and ecosystem oriented river restoration measures applied in a total length of 300 m (near the village Jankovec). Additionally, a functional monitoring system through construction and installment of hydrological and meteorological stations was established, then efficient pesticide

packaging waste management was established and put into operation, a feasibility Study on Biodegradable Waste Management in the Prespa Region was developed and different public awareness and educational activities were initiated and conducted.

SDC cooperation with UNDP continues with the ongoing project on Biodegradable Waste Management in the Prespa Region; however this project is not subject of the current External Review.

Following implementation of above listed projects and measures/activities, the impact of the implementation has to be evaluated, including assessment of the efficiency, effectiveness, impact, relevance and sustainability of measures and actions.

1.1 GOALS/OBJECTIVES OF THE EXTERNAL REVIEW

The main objective is to:

- assess whether conditions for improvement of the environmental status of Golema River have been created as a result of the project activities and interventions; and

- provide findings and recommendations from capitalized experience (lessons learnt) for eventual further cooperation on interventions in the field of water and nature protection with the UNDP or/and stakeholders involved in the Golema River project.

Additionally, the external review shall

- evaluate the level of achievement of project activities;

- assess whether activities planned in the Project documents were performed as planned;

- assess project approach and management.

The complete Scope of Work and the Methodology used in evaluation are presented in Annex IV ToR

2. EVALUATION RESULTS

2.1 STEPS OF THE EVALUATION

1. Review of the relevant documents related to the project has been undertaken in Nov. 2011. A list of documents is presented in Annex III.

2. Initial briefing

   - management of the SCO Macedonia & National Programme Officer 12.11.2011,and
   - the UNDP Energy and Environment Programme Officer in charge of the project, Ms. Anita Kodzoman 30.11.2011;

3. Site visit to Prespa region: December 5 - 9 2011:

   - Site visit to Golema River catchment and location of Project interventions; Survey of river corridor conditions, including riverbed, banks, corridor, morphology, buffer zone, state of forests in the river vicinity, solid waste & organic waste conditions, structures, etc. Survey of quality of civil works – urban & peri-urban part of the river;
   - Interviews with all relevant stakeholders: beneficiaries, institutions/organizations involved in Project planning, implementation, oversight and/or endorsement, UNDP Offices and other donors; Schedule and list of interviewed persons attached as Annex II to this Report.
   - Interviews/semi structured surveys with general public on project visibility & perception;

4. Debriefing – report to SCO National Programme Officer

5. Reporting – Preparation of Draft Report

2.2 PROJECT MANAGEMENT ARRANGEMENTS

Strategy of Intervention. The Project was planned to impact three levels: macro (Ministry of Environment and Physical Planning –MEPP, and the Ministry of Agriculture, Forestry and Water Economy, MAFWE), meso (municipality of Resen) and micro (farmers, local population, civil society organizations, village communities, visitors, and tourists). Stakeholders have been well identified in advance. Some expected legal & organizational changes planned at the project formulation phase did not happen (like transformation of Water Management Organization, implementation of the new Water Law). This however, did not hamper project implementation or the results achieved. Capacities and progress of institutions on national level (ministries), on the other hand have been overestimated, resulting later in slight delays in project implementation phase. Selection of implementation modality and Municipality of Resen as key partner proved to be good.

Project Implementation has been well planned and organized with UNDP as Implementing Agency. Project Implementation Unit (PIU) has been established in Resen at the onset of the Project, comprising of Project Manager and Project Assistant. Support of UNDP CO, Environment and Energy Programme and Operations has been substantial throughout implementation. Implementation modality selected is DEX (direct execution), according to UNDP Operational Procedures, with Municipality of Resen as major partner.

Project Steering Board has been established with major stakeholders included (SCO, UNDP, MEPP, MoR). The Board provided guidance throughout implementation phases.

UNDP CO Macedonia: A New Project on Biodegradable Waste Management also emerged as a result.of Golema River Restoration Project. Due to its achievements, merits, number of associated projects and volume Golema Reka has been upgraded into a Programme.

Management Arrangements in the case of Golema River Restoration, Phase I and II have been adequate, providing proper implementation. Possible risks for project implementation and issues with potential to hamper it, were identified, reported, assessed and addressed in an organized and systematic manner. Logs were kept and updated in a timely manner. Regular reports of PIU to UNDP and to key stakeholders realistically reflect the issues the Project was facing, the steps undertaken (countermeasures and management responses) and description of whatever resolution of problems was achieved.

The approach of PIU towards resolving complex contractual and technical issues was to engage an independent expert (even in cases when not strictly required by the law) and rely on this expertise and findings. This is a positive lesson learned.

Independent experts and consultants were also selected in a transparent and open process, based on merit and best value for money approach, in cases when it was legally required (Design Review, Construction Supervision). Without proper expert advice and guidance the Project could have faced troubles regarding implementation quality and sustainability.

The project has been subject to regular UNDP monitoring and evaluation practices, including an annual programme review. PIU and UNDP have prepared and submitted to the Swiss Agency for Development and Cooperation quarterly reports and at the end of the project, a final narrative and financial report.

Annual project reports have been prepared once a year by the project team, with the participation of all stakeholders.

The project has also been subject to an external financial/procurement audit.

2.3 Reporting

During the Project implementation, the following reports have been constantly prepared and communicated:

Report	***To***	***Reporting period***
Quarterly progress report	UNDP, Donor (SDC)	End of each quarter
Annual project report	UNDP, Donor (SDC)	End of the year
Annual work plan	UNDP	At the beginning of the year
Workshops for presentation and discussion proposed river restoration measures	UNDP, MoR, various stakeholders	As Required
Progress report for Ministry of Foreign Affairs	UNDP, MoFA	End of each quarter
Web sites (UNDP and Municipality of Resen)	UNDP, MoR	Continuous
Final Report	UNDP, Donor (SDC)	End of each Phase

The reports produced in the course of implementation were made available and have been fully checked during evaluation (list presented in Annex III). It can be concluded that the reporting has been regular and adequate.

2.4 Financial Arrangements

Project Implementation has been fully in accordance with agreed UNDP Implementation Rules and Procedures, as well as in line with agreement with SDC.

Procurements have been made in transparent and open procedures, fully in compliance with Operations Manuals.

The Project has been subject to regular UNDP monitoring and subject to an external audit.

The external reviewer has randomly checked some of the procurement procedures and documentation (ToR, Public Procurement Announcement, record on applications received, the reports of the process of opening, evaluation and selection, and finally contracting). The records reviewed indicate sound procedures and procurement arrangements.

The project (Phase I and II) has been implemented within the planned budget. Alterations from originally planned budget have been made due to agreed selected prioritization of activities, with consent of all stakeholders represented in the Management Board, without compromising the overall objective of the project.

Funds accrued in the course of implementation, due to favorable exchange rates and savings on some other project activities, have been used for additional activities in the region contributing to the same goal.

2.5 Level of Achievement of Project Activities

A. Formulation of the management plan, definition and implementation of the restoration plan for Golema River

Formulation of the Management plan has been a crucial part of **Phase 1** of the Project. The Project Objective is defined as follows: ***To improve the environmental status of Golema river.***

The set objective is realistic and achievable. Sub-objectives, or purposes, as well as the outputs have been realistically determined as in Table 1:

Purpose		**Outputs**
A To formulate management plan and to define and implement restoration plan for the Golema River.	**R A1** **R A2**	**T**he Golema river catchments is assessed **A** main design for restoration of Golema river is available
B To remove the solid waste from the riparian corridor	**R B1**	Waste dumps (construction waste, pesticide packages, waste apples etc.) are removed from the riparian corridor along the river and in river bed.
C To restore the stream habitat and riverbed morphology	**R C1** **R C2** **R C3** **R C4**	**A**ssessment study is prepared **F**inal Design on restoration of the Golema River is prepared. **S**elected restoration activities are implemented. **M**onitoring station for water quantity and quality on Golema River is equipped.
D To increase public awareness for the importance of river restoration and other environmental problems and issues in the region	**R D1** **R D2**	**P**ublic awareness regarding importance of river restoration is increased. **S**takeholders are involved in the preparation of the restoration plan.

Regarding Sub-objective or purpose *A: To formulate management plan and to define and implement restoration plan for the Golema River*, both outputs have been achieved:

RA1	The Golema river catchments is assessed	✓
RA2	A main design for restoration of Golema river is available	✓

The assessment of overall condition of Golema River has been made in following stages:

1. Rapid Expert Assessment of Golema River Catchment– Made by Prof. Dr. Popovska in 2006, identifying main problems and issues;

Problems related to the current river status were identified during the expert's assessment:

- serious decline of the water quantity
- continuous deterioration of water quality
- significant reduction of biological diversity within the whole river ecosystem,
- surface erosion and significant sediment transport into the lake,
- flooding of agricultural lands after intensive rainfalls.

The above environmental problems of the river and its watershed are caused by the following main factors:

- intensive agricultural development in the river basin,
- inappropriate management of the industrial and municipal solid waste,
- direct inflow of both industrial and communal wastewaters into the river itself,
- uncontrolled exploitation of natural resources within the river basin, in particular illegal timber harvesting,
- insufficient monitoring of hydrological, water quality and other environmental parameters,
- low public awareness,
- weak enforcement of the water resource management regulations,
- low maintenance of the river channel etc.

This brief analysis of the main environmental problems and their causes shows that most of them are related to the human activities and current socio-economic and political conditions in the region, and thus special attention should be given to them when the restoration and protection measures are being designed.

2. ToR for in-depth assessment and formulation of Management plan has been prepared by UNDP, in which 7 separate Tasks (Studies) have been identified.

3. Elaboration of Assessment and Management Plan – A Consultant (consortium consisting of three companies) has been selected in a transparent and open process, according to UNDP Operational Rules & Procurement Procedures. The following reports have been produced:

    1. Task 1. Restoration of the Riverbed Riparian Corridor
    2. Task 2. Mitigation of the Solid Waste and Wastewater Pollution
    3. Task 3. Improvement of the Wetlands Condition

4. Task 4. Improvement of the Forest Cover and Mitigation of Erosion
5. Task 5. Mitigation of the Problems Related to the Current Land use
6. Task 6. Improvement of River Monitoring
7. Task 7. Public Awareness Raising

The reports have been elaborated in a professional manner, with fairly high expertise. They provide a good insight in the state of environment in Golema River corridor, identify the major pressures and threats, as well as suggest measures for improvement of the conditions.

It can be concluded that the above-listed reports, produced by the Project, created a solid base for further activities in the Golema River catchment, but also in the whole MK Prespa region. Therefore, the sub-objective *RA1 The Golema river catchments is assessed* has been fully accomplished.

Delays have been recorded in elaboration of Task 1, due to number of objective and subjective reasons. To name a few, the complexity and the scope of the task demanding innovative environmental/conservation approaches had not been fully understood by the principal consortium partner. This had lead to classical hydrological/engineering design approach. However, the PIU and UNDP checks-and-balances system provided for an independent review (Civil Engineering Faculty Skopje) for the full time of the design elaboration. This ensured that the idea behind the ToR, namely *natural river corridor restoration* stays in the focus.

Taking into account that all proposed restoration measures by far exceeded the funds available, consultation process involving all major stakeholders have been enacted. This had lead to prioritization of realistic and achievable activities contributing most to set overall and specific objectives – restoration of the river corridor. Some management decisions and choices were influenced by the key partners/beneficiaries. Namely, Municipality of Resen steered activities on restoration of the river corridor towards intervention in the urban and peri-urban part of the river, raising the issues of nature oriented conservation versus river training/flood protection engineering approach. In a long process of design reviews and adjustments, the principles of river restoration were kept with the interventions in urban stretch of the river. Finally, especially with interventions in Phase II, a certain balance between approaches has been achieved.

According to Macedonian legislation regarding Task 1 - Restoration of the Riverbed and Riparian Corridor, the level of technical documentation necessary for permits was high (Detailed technical design, with elaboration of all technical details and all phases). Completion of project documentation and obtaining all permits adjusted with Detailed Urban Plan of Resen also did slow down implementation. It has, on the other hand, strengthened capacities in the MoR for project management. Slight delays did occur due to UNDP strict procurement

rules on availability of funds for tendered procurements. Following adjustment of the volume of restoration works, the procurement processes continued promptly.

It can be concluded that *Output RA2 - A main design for restoration of Golema river is available* has been accomplished.

In this particular period of implementation (Phase 1) a number of possible risks for project implementation and issues with potential to hamper it, were identified, reported, assessed and addressed in an organized and systematic manner. The communication with key stakeholders has been permanent and comprehensive.

It can be concluded that the detailed assessment & reports, as well as the resulting activities and projects have 1. Provided in-depth knowledge on environmental issues in the region and raised awareness, 2. Encouraged further actions and projects, and 3. Introduced the approach of Integrated River Basin Management and set an example of river corridor restoration measures.

The overall objectives of the Restoration of Golema Reka- Phase II, were to to continue with the implementation of all measures and activities idenfified as a priority, in agreement with all stakeholders. More specifically:

- To improve the watershed's natural ability to clean water
- To mitigate the uncontrolled wastewater discharge related problems
- To remove solid waste from the riparian corridor
- To restore the stream habitat and channel morphology
- To augment the riparian cover
- To protect the stream substrate and restoring conditions for the return of the natural biological diversity.

The planned activities in Phase II have been identified as:

1. Interventions in river corridor
    a. Additional restoration of 160 m of riverbed;
    b. Additional restoration/regulation at the boundary of urban to peri-urban part of the river;
    c. Construction of 1,600 m wastewater collector pipeline;
    d. Ecosystem oriented river restoration measures in rural section of the river.
2. Mitigating negative impacts of human activities:

a. Establishment of a functional monitoring system with hydrological and meteorological stations;

b. Establishment of an efficient pesticide packaging waste management system;

c. Preparation of a Feasibility Study on Biodegradable Waste Management System

d. Capacity building and awareness raising through various public awareness and educational activities.

The objective and the activities have been realistically determined. Accomplishment of targets and the process will be evaluated in the next subchapters below.

B. REMOVAL OF THE SOLID WASTE FROM THE RIPARIAN CORRIDORS

Planned Output:

RB1	Waste dumps (construction waste, pesticide packages, waste apples etc.) are removed from the riparian corridor along the river and in river bed.	✓ achieved

The population in Prespa largely depends on agriculture, mainly apple production. The annual apple production ranges from 80,000 - 110,000 tons. The production is characterized by excessive application of fertilizers and pesticides, and also, the agricultural activities generate large amounts of solid waste which is being illegally dumped. In the absence of an efficient management system, pesticide packaging was most commonly dumped along the river corridors, local roads, bridges, or illegal dump sites in neighboring villages. The situation was even more complicated because of the low level of environmental awareness among the local population.

Restoration of Golema River Project did support number of activities and initiatives regarding clean-up and improvement of solid waste management. In collaboration with UNDP GEF Prespa Park Project, number of activities of NGOs and CSOs have been supported. Support has been provided also for project formulation and application to other funds (GEF Small Grants Programme and others), publications and training activities.

A waste collection vehicle has been procured, primarily for the Pesticide Packaging Waste Management System, which is also used for other regular waste management activities of the PE "Proleter". PE "Proleter" also plays a role in the overall improvement of the solid waste management in Prespa. Services and coverage have been improved.

Municipality of Resen is determined to resolve the problem of solid waste. A solid waste collection fee has been imposed and charged (various fee for households and industry). The collection rate is satisfactory, providing thereby the PE with means for sustainable operation and maintenance of the system.

Number of clean-up activities have been supported in the Golema River corridor. IT is obvious that besides the actual clean-up, these activities have positively affected public awareness and attitude. The region is notably less polluted and much less waste dumps can be noticed in the region as compare with few years ago.

C. RESTORATION OF THE STREAM HABITAT AND RIVERBED MORPHOLOGY

Sub-objective C *To restore the stream habitat and riverbed morphology* had the following outputs:

R C1	Assessment study is prepared	✓	Implemented
R C2	Final Design on restoration of the Golema River is prepared.	✓	With delays in Phase I, fully completed.
R C3	Selected restoration activities are implemented	✓	Implemented.
R C4	Monitoring station for water quantity and quality on Golema River is equipped	✓	Implemented.

AS mentioned above, the Assessment study consisting of 7 Tasks – Reports on topics of relevance, has been prepared.

Due to delays in elaboration of Task 1 Report, construction works were also postponed. Delays were also recorded due to repeated tendering procedure, resulting from the fact that planned restoration measures exceeded the funds available, not in line with convoluted, yet strict UNDP procurement rules.

According to Macedonian legislation regarding Task 1 - Restoration of the Riverbed and Riparian Corridor, the Detailed technical design, with elaboration of all technical details and all phases was also subject to expert technical review. Obtaining all permits and adjustment with Detailed Urban Plan of Resen also did slow down implementation.

It has to be emphasized that in formulation of the Final Design of restoration of the river corridor, especially in selection of the alternatives, a comprehensive public

participation has been achieved. It has been made with support of MoR and the UNDP PIU.

Eventually, 420m restoration of the riverbed in the urban part of Resen has been constructed.

In Phase I, apart from the interventions in urban part of the river, the following activities in the river corridor have been undertaken:

- Afforestation of approximately 20 hectares of eroded land in the river basin. This has reduced the significant amounts of sediment load in the river and the lake;
- Cleaning of drainage channels nearby Golema Reka in the vicinity of villages D. Bela Crkva, Podmocani, Grncari and Ezerani (supporting local initiatives). It has been considered as a measure against flooding (approximately 500 hectares of agricultural land protected) and about 3.5 km of drainage channels were cleaned and made fully operational;
- procurement of automatic hydrological station, with a goal Golema Reka to be connected to the national river monitoring system (RIMSYS) also established with the support provided by the Government of Switzerland.

Originally it was planned that approximately 24 ha of eroded land will be afforested with 120,000 seedlings of black locust. However, the results from the independent expert supervision of the quality of afforestation have shown that the contractor hasn't completely fulfilled the provisions of the contract. Therefore, the contract with the company was terminated upon series of evaluations of the afforestation activity. Further afforestation activities have been undertaken to correct and achieve the planned effect.

The hydrologic monitoring station has been installed only in Phase II.

In phase II, the following activities in the river corridor have been implemented:

- Additional restoration of 160m of the riverbed (complementary to the 420m restoration of the riverbed which was completed under the project's previous phase);
- construction a waste-water collection pipeline (along the restored river-flow), in a total length of 685m
- construction of a 1,600 m waste-water collection pipeline;
- Restoration/regulation of 60m of the Golema Reka riverbed in a boundary of the urban and the non-urban section of the riverbed completed, downstream the Prespatex Bridge. At this location the river flow was partly

obstructed due to narrowed opening of the bridge and was generating serious erosion of the riverbanks downstream the bridge;;

- Ecosystem oriented river restoration measures implemented in a selected section outside the urban area on a micro-location nearby the village of Jankovec in a total length of 300 meters.

The approach has been environment-friendly, and the quality of measures fully in accordance to the quality standards. Cooperation with key stakeholders – MoR and the PE who are in charge of operation and maintenance of all assets have been satisfactory.

The general public is well aware of achieved results due to continuous presence in the public awareness campaigns, announcement boards, media, events and publications.

Complete restoration of the river corridor has not been possible within the scope of the project due to financial limitations, incomplete legislation, available capacities and the extent of measures needed. Sustained efforts are needed in the future to achieve considerable amount of work for full restoration, especially in the lowland parts and in Strict Natural Reserve Ezerani.

D. STRENGTHENING OF THE CAPACITIES OF THE MUNICIPALITY OF RESEN REGARDING RIVER MANAGEMENT AND SUSTAINABLE MANAGEMENT OF THE RESTORED SECTIONS OF THE RIVER

Restoration of Golema River Project has undoubtedly made an impact in the region. Integrating complex in-depth environmental assessment studies, capacity building activities and physical interventions in one project has not been easy to implement, neither for the PIU and UNDP, or the key stakeholders.

Municipality of Resen has a structure similar to all Local Governments in Macedonia: Council (15 representatives of parties) and a Mayor elected in direct elections with a 4-year mandate. The mayor is managing the Municipal administration. Three sectors exist: Sector for legal affairs, public and financial issues; Sector for urbanism, communal works, local economic development, transboundary cooperation and environmental protection; and Inspection. The 65 municipal administration employees are part of the total of 330 civil servants for whom MoR is in charge.

Regarding environmental protection, combined resources of the sectors do have capacity to implement local activities. Some of the capacity and knowledge has been strengthened/built through project implementation. This cannot, however, be clearly attributed to one specific project. It seems to be combined benefit of intensive donor interest for the environmental protection of Prespa, its specific

location, political/transboundary significance and natural heritage. Contacts with employees in various sectors show fairly good awareness of issues significant for nature conservation and protection, as well of the importance of natural resources for the overall economic development of the region.

It has to be emphasized that the Municipality of Resen has financial problems due to large depth inherited from previous mandates and the accrued interest. It is not expected that this situation will change to better in the next few years. This seriously hampers the possible municipal project implementation capacity.

The budget of the MoR has been increased due to implementation of the second phase of decentralization in the country. It also offers some possibilities for additional financial income in the coming years, which may be directed to projects on environmental and water management.

The current situation of transformation of the water sector in the country according to the new LoW (changed responsibilities in the sector & not yet established River Basin Management Authorities) are also not helping for establishment of a sound water management system. Even though the new LoW bestows the Municipalities some responsibilities in the water management sector, it does not provide for sustainable financial means for such activities. It brings municipalities (not only Resen) in an awkward situation to undertake new responsibilities and tasks with the available financial and technical capacities. In this moment, it does not seem likely that the municipalities will widen the scope of their activities in the water management sector, or direct investment into it. The maintenance of already built structures, however, seems to be part of their plans. Also investment in smaller projects is taking place with the limited funds available at the moment (water supply system construction for Krani, construction of part of the sewage wastewater collector in Dolna Bela Crkva).

The Mayor and key administration managers support fully projects dealing with river and water management in general in the environment/water sector. The capacity of MoR has been estimated as appropriate for independent implementation of smaller projects, with not so heavy investment demands. For larger and more technically advanced/demanding project implementation, it has been suggested that best approach is establishment of a PIU for inception and part of the project implementation duration. The Mayor asserts that integrating the PIU staff into municipal administration at some point of implementation would be the most appropriate manner of project implementation and capacity building of the Municipality. It entails institutional involvement and builds capacity at the same time.

E. INCREASE OF THE PUBLIC AWARENESS FOR THE IMPORTANCE OF THE RIVER RESTORATION AND OTHER ENVIRONMENTAL PROBLEMS AND ISSUES IN THE REGION

During implementation of the Golema River Project, due attention has been paid to awareness raising and education activities. Each project activity has been followed by workshops, briefings, information leaflets and articles in the media. Also sign boards, providing essential information and expected results have been used, placed on site at carefully selected locations.

A workshop has been organized in June 2010, bringing together NGOs, farmers associations, apple producers, local government and other relevant stakeholders. The attendees had an opportunity to listen to leading national experts and learn more about river restoration measures and about the advantages of the recently developed pesticide packaging waste management system.

The Project, in cooperation with UNDP GEF Prespa Park Project has continuously worked on changing the attitude of general population towards environmental protection and waste management. Thus, number of initiatives were begun, as well as initiatives of NGO and CSOs fully supported.

The awareness and the situation with solid waste management in general in the region have been significantly improved in the last few years. It cannot be attributed to one project only, but it probably represents the combined overall positive impact of donor supported projects in the region.

The PPWMS functions well at the moment. It is expected that also biodegradable waste project makes further improvements in the habits and attitude of local farmers, and bring positive environmental and economic effects.

Regarding river restoration in particular, farmers in the region have mixed positions. Even though they are aware of the importance of the healthy and protected environment and water resources, it would be not easy to provide a buffer zone in the immediate vicinity of the watercourses, especially in locations where intensive apple production takes place. Establishment of a legally required corridor as stipulated in the new LoW seems impossible for two reasons: the set buffer zone width is too ambitious and practically not implementable in small watercourses, and enforcement of such requirements must be accompanied with subsidies programme and institutional capacity, which are unrealistic at this moment.

The farmers and the general population understand the urgent need to tackle water management problems in the region and sustainable irrigation in particular. No suggestions and proposals were offered though.

In conclusion, it may be freely said that there's significant improvement in the overall environmental awareness in the general public in Prespa region.

In the course of Project Implementation the following publications were published:

Sekovski, D., Popovska C. (2009), *Restoration Measures and Practices in the Prespa Region*, Eleventh International Symposium on Water Management and Hydraulic Engineering (WMHE 2009), Ohrid

Popovska, C., Krstic, S. (2009) River Restoration Manual (in Macedonian: ПРИРАЧНИК ЗА РЕСТАВРАЦИЈА НА РЕКИ), UNDP, Skopje 2009

Popovska, C., Sekovski, D., Stavrić, V. (2010): *Problem Identification and Strategic Planning of River Restoration Projects*, Conference on Water Observation and Information System for Decision Support (BALWOIS 2010), Ohrid

Sekovski D. (2010). *River Corridor Restoration – Principles, Processes, Practices*, Faculty of Civil Engineering, Master Thesis

Sekovski, D. (2011), *The Riparian Corridor Concept – A Valuable Alternative to Traditional Riverbank Stabilization Techniques*, Eleventh International Symposium on Water Management and Hydraulic Engineering (WMHE 2011), Gdansk, Poland (published in the 'Current Events in Hydraulic Engineering' book by the Gdansk University of Technology)

Participation/ support in other publications in conjunction with UNDP GEF Prespa Project:

APPLICATION OF GOOD AGRICULTURAL PRACTICES (GAP) IN APPLE PRODUCTION. Authors: Prof.Dr. M. Postolovski, Prof.Dr. O. Cukaliev, Dr. D. Mukaetov, Prof.DR. M. Kiprijanovski, Prof.Dr. S. Lazarevska, V. Gjamovski, V. Tanskovic. UNDP, Resen, 2008. CIP: 634.10 : 632.9-295.1(035)

AGRI-ECOLOGICAL MEASURES IN APPLE PRODUCTION. Authors: Prof.Dr. O. Cukaliev, Prof.Dr. S. Lazarevska, Prof.DR. M. Kiprijanovski, Dr. D. Mukaetov, Doc.Dr. V. Tanskovic. UNDP, Skopje, 2011.

F. FINALIZATION OF THE CONSTRUCTION WORKS FOR RESTORATION OF GOLEMA RIVER IN THE URBAN SECTION

Construction works on the urban part of Golema (420 m) have been completed according to the adjusted plans.

Additional restoration of 160m of the riverbed has been completed in Phase II (in addition to 420 m restored).

The quality of works has been up to required standard and according to Macedonian legislation.

In addition, additional 60 m of the riverbed have been restored. This intervention was identified in consultation and close cooperation with all stakeholders – including the local authorities, the civil society and the local communities. It provides a regulated/controlled transition between regulated urban and the unregulated part of the riverbed and provides additional flood protection of the particular stretch or the river near Prespateks Bridge.

Overall, the restoration/regulation works ensured that the town of Resen and its broader area are now safe from potential floods. In addition, the regulation enabled construction of a communal waste-water collector pipeline connected to WW network/collector discharging into WWTP Ezerani for treatment prior to being discharged into the lake.

All this contributes to improvement of the environmental status, the downstream water quality and created conditions for the development of native flora and fauna of the Golema Reka River, revitalization of the natural ecosystem and an improved self-purification capacity of the river and eventually, improved water quality of Lake Prespa. Quantification of improved water quality and/or waterbodies state cannot yet be made, due to lack of systematic and coherent 'before and after' data. Existing data on water quality (previous ad-hoc investigations, surveillance monitoring for the Prespa WMP Project) are not conclusive enough.

G. COMPLETION OF THE SEWERAGE SYSTEM ALONG THE RIVER

As Part of Golema River Project Phase I, the existing wastewater and stormwater pipelines discharging into Golema River in the urban part were identified as a significant problem. Designs were completed for both separation of sewerage from stormwater pipelines and for connection to a collector.

In Phase II a waste-water collection pipeline (along the restored river-flow), in a total length of 685m has been constructed. It was a necessary measure because the water quality was seriously being affected by the continuous discharge of both household and industrial wastewaters. The wastewater pipeline is connected to existing WW network in Resen, and it has prevented direct discharges into the river. It has significantly improved the sanitary and especially aesthetic impression of the river in the urban part. In combination with the regulation and pedestrian lanes, it now presents an enjoyable location for the population of Resen.

Stormwater discharge pipelines have been separated and are now discharged into the regulated riverbed.

Funds saved in the previous phases, in combination with favorable exchange rates have been used to construct a major part of the sewerage collecting network in the village of Dolna Bela Crkva and connect it with the main municipal collector leading to the waste water treatment plant in Ezerani. It covered construction of the complete eastern collector (850 m) and partial construction of 400 m of the western collector. This contributed to the improvement of public health in Dolna Bela Crkva and the environmental status of Golema Reka and all natural resources.

It has to be emphasized that this, originally not planned activity, has been accomplished in active cooperation, coordination and consent of all key stakeholders, SDC, UNDP PIU, MoR and the local population. The MoR has provided the design, and has undertaken the obligation to invest own funds into completion of the collectors, as well as its maintenance.

H. DEMONSTRATION OF ECOSYSTEM ORIENTED RIVER RESTORATION IN RURAL AREAS

The river section that was identified as suitable for demonstration of ecosystem oriented riverbed restoration measures is located outside the populated area of Jankovec. It is approximately 300m long, extending upstream and downstream of the local bridge. This particular section was exposed to significant quantities of solid waste (primarily of an organic nature), as well as to intensive erosion processes. The river bank at the both sides had a vegetation cover, and local inhabitants were additionally covering it with branches, as a means for erosion control.

A team of highly renowned experts was brought together to produce the design pursuant to the National Law on Construction and to assist the realization of integrated ecosystem riverbed restoration - one of very few such interventions ever implemented in the country. The whole process was facilitated by the author of the manual, who was engaged as independent technical advisor by UNDP.

In parallel with the ongoing riverbed restoration activities in the Prespa region, UNDP also supported the preparation of a riverbed restoration/riverbed engineering manual, (in the frames of the larger ongoing GEF Prespa Project), which outlined the latest state-of-the-art integrated ecosystem approaches for riverbed restoration/river engineering. This manual was used as a guiding document for designing and implementing all the key ecosystem oriented measures in the case of the Golema Reka River.

All activities were successfully completed in February 2011.

This project activity demonstrates the applied environmental friendly approach practice in river restoration engineering outside an urban area. It is expected to serve as model that can be replicated in other parts of the country.

I. SUPPORT IN THE ESTABLISHMENT OF AN EFFICIENT AND SUSTAINABLE PESTICIDE PACKAGING WASTE MANAGEMENT SYSTEM AT MUNICIPAL LEVEL

One of the priorities identified in all studies was the pesticide packaging waste, which is considered as hazardous and needs to be handled separately from other waste, pursuant to national regulations.

Based on the "Efficient and Sustainable System for Pesticide Packaging Waste Management in the Prespa Region" Study recommendations, a system for pesticide packaging waste management on the entire territory of the Resen Municipality has been developed, consisting of one central station and four (4) pesticide packaging transfer stations, built in the villages of Carev Dvor, Ezerani, Jankovec and the town of Resen. Plastic 1.1 m^3 containers were procured for equipping the transfer stations. In Phase 1 of the project, also a special refuse collection vehicle was procured.

The works were completed in July 2010. The Transfer of Title of Assets from UNDP to the Municipality of Resen has been officially carried out in October 2010.

In 2011 the system functioned as planned. It indicates a change of attitude and habits of farmers in the region. PE Proleter manages collection and transport of PP waste to the central station with the vehicle supplied by the Project. No transport of this accumulated waste has been made to a sanitary landfill and/or incinerator yet.

PE Proleter confirms that no fee has been imposed for this waste to beneficiaries/farmers, and that they do not receive any compensation for increased scope of work. At the moment, the costs are covered by the overall funds available to the PE collected by solid waste charges. The vehicle, however, is also used for other tasks connected to PE waste collection. It is not clear how the costs that will inevitably occur in the future be covered. This refers primarily to transport of piled PP the waste to a sanitary landfill/incinerator (either in Drisla near Skopje, or other), but also to O&M costs for the vehicle and transfer/central stations.

In the current practice of PE Proleter, this spillage of funds collected for a more viable operation (eg. waste collection) to less profitable one happens often. This is due to set prices for various public services they provide. The prices of services are set and depend directly on the Council of MoR decisions. The Mayor understands the necessity to attribute the costs (Packaging Waste collection) to users, i.e. farmers, however is hesitant to tackle this sensitive issue as yet.

The Central Station and the Transfer Stations are in good shape, well maintained.

In the vicinity of the stations small piles of other solid & organic yard waste has been noticed. This indicates that more has to be made for public awareness on waste in the region.

Feasibility Study on Biodegradable Waste Management in the Prespa Region has been prepared. Based on its findings, a new Project has been developed, and at the moment implemented in Prespa Region. It provides a comprehensive, self-sustained system for management of bio-degradable waste. Apart from the significant positive effects to the environment (soil surface and groundwater), it is supposed to have beneficial economic impact to the local community. Primary beneficiaries are planned to be local farmers.

The positive experience from PPWMS, as well as BWMS, when implemented, may serve as a model for replication in other parts of the country which are facing similar problems.

J. ESTABLISHMENT OF A MONITORING SYSTEM FOR TARGETED PARAMETERS

Procurement of Hydrological & Meteorological equipment for a fully automated Monitoring Station has been procured within Phase I of the Golema River Project. The construction of the premises of the meteorological and hydrological stations in Phase II allowed for the installment of the automatic hydrological and automatic meteorological stations which were procured previously, in the earlier stages of the project.

The monitoring system that was established within Golema River Project is complementary to GEF's comprehensive transboundary monitoring scheme and all other mechanisms that were put in place to allow exchange of environmental monitoring data among all three counties sharing the Prespa Lake. Monitoring of all agreed parameters has been enabled by construction/installation of the Station, as planned with the Project.

A hydrological water quality/quantity station has been located within the restored/regulated river stretch in Resen. The station is fully functional and in operation.

The transfer of assets (hydrological station) from UNDP to the Municipality has been made successfully in October 2010. The Station is not yet included in the national network of hydro-meteorological stations within Administration for Hydro-Meteorological Works (AHMW). The transfer is a responsibility of the MOR.

The Station significantly strengthens the capacities of the national institutions responsible for the environmental monitoring of the Prespa Lake basin, and

enables regular monitoring of the river, collection of data and reliable information for future decision making processes. The monitoring system (regular data gathering, analysis, recommendations and conclusions on the hydrological and meteorological status of the Prespa region) is supposed to provide quantifiable information on the success achieved with the implementation of the river restoration/protection activities.

Although there are some indications, the water quality data collected so far are from ad-hoc, unsystematic and irregular monitoring, not yet sufficient to corroborate that the river restoration activities contributed to the improvement of the downstream water quality and created conditions for the development of native flora and fauna, leading to the revitalization of the natural ecosystem values and an improved self-purification capacity of the river.

ANNEX I ABBREVIATIONS

UNDP GEF Prespa Park Project	Integrated Ecosystem Management on Prespa Lakes in Greece, Macedonia and Albania, Transboundary 'umbrella' Project, financed by GEF, implemented by UNDP
UNDP	United Nations Development Programme
GEF	Global Environment Facility
SDC	Swiss Development Cooperation
SCO	Swiss Cooperation Office (Embassy of Switzerland in Macedonia)
WM	Water Managements (Water Management Organization)
PE	Public Enterprise
MoR	Municipality of Resen
WS	Water supply
WW	Wastewater
WWTP	Wastewater Treatment Plant
GW	Groundwater
MoEPP	Ministry of Environment and Physical Planning
MoAFWE	Ministry of Agriculture, Forestry and Water Economy
EU	European Union
IPA	Instrument for Pre-Accession of the EU
IPARD	Instrument for Pre-Accession for Rural Development of the EU
MK	Macedonia, Macedonian
AL	Albania, Albanian
GR	Greece, Greek
NGO	Non-Governmental Organization
CSO	Civil Society Organization
MoFA	Ministry of Foreign Affairs
BWMS	Biodegradable Waste Management System
PPWMS	Pesticide Packaging Waste Management System
O&M	Operation and Maintenance

ANNEX II REPORT ON MEETINGS

Meeting with Mr. Mihael Volkanovski, Mayor of Resen

The Mayor emphasizes good cooperation with UNDP on all projects, including Golema River Projects. He is well aware of the Swiss financing of the project and is grateful for the generous support.

In MoR publication "Two years of dedication 2009-2011" all implemented projects in Municipality are listed. Prominent place is assigned to Swiss-financed projects – regulation of part of the riverbed in Jankovec, Pesticide Packaging Waste Management System (PPWMS) and the upcoming Biodegradable Waste Management Project (BWMS).

The Mayor is well informed on the ongoing activities due to regular meetings with UNDP GEF project staff. In his opinion, biodegradable waste seems a serious problem, and the new Biodegradable Waste Management Project is important contribution to environmental protection of the Region.

The Projects have contributed to overall awareness of farmers & general public on pollution caused by agrochemicals (fertilizers, pesticides). The situation with overuse is improving, leading to more controlled and appropriate application in the region.

Capacity of the Municipality of Resen

The Mayor deems that the overall capacity of the MoR has increased with implementation of various donor-financed projects. Staffing is appropriate & sufficient for implementation of all municipal tasks.

Problems exist with financial liquidity of the MoR, due to inherited debts (and interests) from previous local government structures. Therefore MoR has not yet fully entered the second phase of financial decentralization. It is foreseen that the debt will be burdening the financial operation of MoR in the next several years.

Some increased funding may be expected when the Government of Macedonia confers to Municipalities the right to administer state-owned land (possibility to lease, sell, develop) from January 2012. The Mayor, however, does not expect high demand or an investment boom in the region, in these conditions in the country.

It seems that donor-driven projects will remain significant in the future period.

Public Enterprise "Proleter"

PE functions well. On question regarding sustainability of operations, appropriate pricing and collection rate, the Mayor is satisfied with the collection rate (water, wastewater, solid waste) in

the Municipality. Solid waste tax of 60 and 180 MKD/month is imposed for solid waste collection for households and industry, respectively. The collection rate being satisfactory, he thinks that these funds will be sufficient for proper operation of the PPMS. However, no idea exist how to charge the farmers only (polluter pays, user pays principle) for the specific tasks of PE performed for agriculture waste management (both PPMS and BWMS).

Wastewater charges (separated for WW collection and treatment) exist in the monthly water bill. Water is measured with water meters and paid for. Some problems exist with the treatment in WWTP Ezerani, due to partial mixing of rainwater in municipal sewage wastewater system during wet periods.

Some new investments (village of Stenje water supply) have been made in the last period. No capacity for larger investments exist, though.

Water Sector, including Water Management Organization (WM) "Prespansko Pole" in re-establishment

Low capacity (financial, technical, institutional) exists in the water sector for serious project implementation. Poor operation of WM and the unmaintained, deteriorated irrigation system in the last decades led to drilling of large number of private individual wells, investment in on-farm drip irrigation systems. No capacity exist either on national level (MoAFWE, MoEPP) or local (WM) for absorption of funds or management of large infrastructure projects (dam, reconstruction of irrigation system etc.). Best strategy has yet to be defined. Possible detailed Feasibility Study for improvement of the water supply/security in the region (as planned in Prespa WMP) may give answers.

It is clear that current irrigation practices (wells and river intakes) are unsustainable due to problems: ever increasing depth of private irrigation wells and possible GW pollution. However, registration and regulation will take time and effort. Timeline & institution – unclear.

The new Watershed Management Plan (UNDP GEF) is good starting point for some measures in the region. Future steps are not known due to unknown institutional/organizational setup on national and local levels. Possibly, activities for water protection may be implemented easier on local level with MoR and project support.

Integration of future PIU staff fully into municipal administration (upon project completion) is seen as one possibility for strengthening the capacity of the MoR. This model may be useful for future projects in the water/environment sector.

Agriculture

Main economic activity in the region = perceived very important. Good market is not guaranteed every year. Governmental support needed: organized/controlled acquisition, improved access to EU markets, loans for development etc.

Income from apple production is cca 10-20 Million € per year. Perceived as important sector also in the future development.

Future development expectations

Tourism: Health and eco-tourism to be developed further. Mass tourism or large investments are not likely to happen

Agriculture: Agro-ecological measures to be implemented (as planned with number of projects, also in WMP)

Support to farmers (projects + government) market development (EU), subsidies, regulated/organized apple acquisition

Needed change in orchards' structure (i.e. cropping pattern): 1. decrease of number of trees per hectare from current 6-7000 to 3-4000, and 2. New apple varieties requiring less agrochemicals and water

Technology transfer – apple production, storage, processing

Government: Opening of border crossing Markova Noga between MK and GR

Continuation of decentralization process: administration of state-owned land by the MoR

Meeting with Mr. Muzafer Murati, General Manager of PE "Proleter"

Communal Enterprise functions normally in the given conditions. The following relevant issues were mentioned:

The cooperation with PIU has been good. In defining project activities regular consultations were made and all stakeholders included. The approach in implementation has been the same, taking into account local peculiarities and conditions.

The PE is satisfied with the project activities within Golema River and other projects.

Further discussion has revealed that not all aspects of sustainability have been covered. Example is the established Pesticide Packaging System. Namely, no mechanisms are in place for collection of financial funds for this activity or planned in the near future. At the moment the costs for collection of Pesticide packaging waste, its transport to the collection warehouse are covered by the PE. This is still not an issue, due to not full capacity of operation (7 collection points completed, and in total 27-30 are needed in Prespa region), the capacity of the warehouse designed for several-years quantity, and therefore no need to transport it yet to a proper incineration capacity – Drisla landfill in Skopje, etc. However, it is clear to the GenMan of PE that in due time the need to keep in shape the buildings and the received truck will increase the costs. It is not clear how these costs (investment maintenance, repairs) will be covered for.

Regarding overall operation of PE "Proleter": sufficient staff is employed for the tasks covered at the moment; some of the staff is not fully usable, however cannot be laid off due to social/human considerations.

Meeting with Mr. Ajman Almalla, Head of Urbanism Sector, MoR

Mr. Almalla emphasizes increased workload following GoM decisions on legalization of illegally build buildings, purchase of land (household plots) in urban areas, besides regular work in the Sector. Staffing is OK, tasks processed promptly and regularly. In spite of the blocked account of the MoR, insufficient funds for some regular tasks (travel costs, petty expenses), no problems occur in regular work.

Problem in general is the blocked account of the Municipality, preventing/delaying some planned activities. Increased inflow of funds may be expected when the GoM confers to Municipalities the right to administer state-owned land (possibility to lease, sell, develop) from January 2012. However, available land in Resen area is not attractive for significant investment, since higher valued urban land is taken already. Nevertheless, it is a development possibility that has to be used.

Opportunity for tourism development seen in administration with beaches on Lake Prespa (concessions to be issued by MoR). This will provide possibility to implement some plans for sustainable clean-up of the lake shore and beaches, better water protection etc.

Urban plan for Ohrid & Prespa regions has been adopted and followed in decision making and everyday work.

On the issue of providing rivers the necessary (and legally stipulated) buffer zone: even if legally required expected to be difficult to implement in Prespa region. Farmers use the land up to the river banks, not providing the buffer zone. Problems are the laws which are very difficult to implement due to high standards set and no provision for realistic implementation on site. Also ownership issues: cadastre still not complete, boundaries difficult to define. Situation complicated with changes occurred in the meantime- situation in books does not always correspond to actual situation on site, some ownership issues have not yet been resolved etc.

Meeting with Mr. Stevce Radevski, Union of Agroproducers, Resen, President

Union of Agroproducers – is a NGO uniting apple growers in Prespa region with active participation/membership of 300 farmers (with paid membership fees). Main activities – improvements of conditions for apple production, protection & representation of farmers.

Active participation as farmers' official representatives on local level (MoR – Council and Mayor) and the National Government (GoM, MAFWE etc.). Local partners of number of projects in the region in the field of agriculture & environment (UNDP and other donors).

Active in all activities regarding agriculture in the region.

The Union is managing completely the Agro-chemical Laboratory (established by UNDP GEF project in 2004). The Management Board consists of 9 volunteers- members of the Union. One graduated chemist permanently employed + one agronomist engaged ad-hoc for projects and in periods when agro-chemical analyses of soil are required.

The Lab performs regular monitoring of 30 parameters on 5 locations. Five prognosis (local) are produced regularly and communicated to farmers in the region, with recommendations on timing and use of agrochemicals.

These activities provide good protection from plant diseases and pests, while providing prudent and appropriate use of agrochemicals (fertilizers, pesticides, fungicides etc.). The use of agrochemicals has decreased in the last period on one hand, and on the other the farmers are better educated and informed on harmful impacts of chemicals. Good for the economy and the environment.

New regulations of the GoM for subsidies (national and EU IPARD) in agriculture require farmers to produce agro-chemical analysis of the soil at the beginning for application for funds. Number of analyses increase and may provide solid basis for sustainable work and possible expansion of the Lab. The required soil analysis also provides farmers with information on fertilizers already dissolved in the soil (N, P, K), as well as recommendations on manner, quantities and frequency of agro-chemicals use. Considered economically and environmentally friendly, in addition to farmers' capacity building.

The Union has participated actively in number of publications (manuals, recommendations, analyses) for farmers in the region. Number of awareness raising activities and projects implemented.

Cooperation with UNDP projects is assessed as excellent. Individual bilateral donors are not so visible and known by the general population as compared to UNDP (umbrella project blends practically all international donor support).

Regarding *irrigation*: current problems recognized, awareness exists that the current situation may not be sustainable on long run. No suggestions how to improve/develop. Capacity of WM "Prespansko Pole' is assessed as extremely low, the deterioration of existing irrigation system is significant, somewhere beyond possible reparation. Farmers are willing to invest in good/secure irrigation scheme.

Detected *dangerous substances* in soil/water (DDD and DDE found in analyses made for the Prespa WMP)? Farmers use agrochemicals bought either locally or in Albania, however in both countries imports are controlled and regulated. No idea how these substances could occur in the region.

Buffer zones for watercourses would be difficult to implement in the region due to tradition, unimplementable laws, and low implementation capacity. Possible solution is to compensate farmers for fallow land to upkeep buffer/protective zones on the river banks. Cadastre of agricultural land is not yet updated, complete & accurate.

Relations with Municipality of Resen are hampered due to political/party influences and divisions.

Capacity in the water/irrigation sector is assessed as very low, if existent at all. WM Prespansko Pole even if re-enacted does not have the capacity to operate and/or supply water to farmers in a satisfactory way (timeliness, quantity, price). Out of few established Water User Associations (WUA) in the region only one is operational and functioning well – WUA in Arvati & Krani (annual budget of 400 k€ provides also for maintenance and investment). Farmers in most of the region have to manage by themselves to provide irrigation water – solved with investment in wells and drip irrigation. Dept of wells (depth-to-watertable) increases by the year in irrigation season / summer, inducing higher costs for pumping and new investments in well deepening..

Meeting with Mr. Ljupco Krstevski, Coordinator of *Coalition for Prosperous Prespa*

Coalition for Prosperous Prespa is an association of 12 active CSOs and NGOs in MK Prespa Region formed for support and implementation of ongoing projects. The member NGOs and CSOs are with various focus and goals, united in wish to help development & protection of Prespa region.

Activities comprise:

- Implementation of projects/programmes from various donor grants:
- Participation in projects/ campaigns, consultations, surveys, consultations, conferences;
- Participation in management bodies representing the CSO/NGO sector (eg. Prespa Park Coordination Committee)
- Wide spectrum of public awareness activities, trainings, study trips, cooperation with experts, etc., demonstration – one day clean-up activities (PET, solid waste, waste separation), promotions etc.

Projects realized:

1. Promotion of partnership and cooperation of CSOs in Greece, Albania and Macedonia

2. Improvement of water quality of Prespa Lake as a result of decreased load of pesticides, phosphates and nitrates (GEF Small Grant Programme + UNDP GEF supported)

3. Transformation of illegal dump-sites from v. Sirhan to v. Stenje into attractive gardens with inventive and sustainable maintenance system

4. Strengthening of public environmental awareness by production and promotion of organic fertilizers – SCO ZOKUS "Nijazi bej" – Resen

5. Partnership for management of natural carp nurseries in Lake Prespa – Sport Angling Society "Pelikan" – Resen

6. Promotion campaign on Ezerani Wetland and Lake Prespa – World Wetlands day

7. Support in the establishing of the "Sustainable System For Management With Solid Waste From Package Of Pesticides And Fertilizer In The Prespa Lake Basin, Macedonia" and expressed will to financially contribute to the project. The project was submitted and approved for funding to the Global Environment Fund –Small Grants Programme.

The main stress of the project will be pesticide and fertilizer waste package management with special stress of the Golema Reka river basin site. At this basin there are intensive apple production orchards that are generating huge amounts of pesticide and fertilized waste package. The approved grant should establish sustainable pesticide package waste management system through construction of the pilot micro stations for such waste collection as well as with to enable networking of all stakeholders and participants of the system-Municipal Enterprise, Apple Producers, Small Business and Municipality.

Meeting with Ms. Anita Kodzoman, Programme Officer – Environment and Energy Programme, UNDP Country Office in Skopje

Present on the meeting: Mr Astrit Zekir, Golema River Project Manager, Mr. Dimitrija Sekovski, Mr. Aleksandar Blazevski,

Ms. Kodzoman comprehensively briefed on the background, initiation, preparation and implementation of Golema River Project from UNDP perspective. Also, chronological overview of the Project progress was presented, including major milestones, achievements, issues, staffing. Key stakeholders were discussed and the experience of cooperation. The complete available project documentation was mentioned and arrangements made for insight into documentation. Also arrangements for logistical support in Project region made.

Cooperation with SDC highly appreciated and deemed very successful. Due to successful cooperation and continuity on several projects, Golema River promoted to Programme in UNDP CO Macedonia.

Cooperation with MoR – Senior Beneficiary, improved significantly in the course of project implementation. Capacity of MoR (project management, environment) built as a result of cooperation. Needs further capacity improvements.

Public awareness in Prespa region – significant improvements recorded, however still needs to be made.

Meetings with Mr Astrit Zekir, Golema River Project Manager

Insight into Project documentation, including:

- Quarterly Progress Reports
- Annual Reports
- Selected tender documentation
- Selected tender evaluation reports
- Selected Project documentation
- Selected Construction Supervision reports
- Publications, brochures, flyers

Site visits in Project area:

- Golema River restoration – urban part
    - Hydro-meteorological Station on Golema River - Resen
- Golema River restoration – in the vicinity of Jankovec
    - Pesticide Packaging Collection point Jankovec

Meetings with UNDP Office in Resen staff

Mr. Dimitrija Sekovski, UNDP GEF, MK National Component Project Manager (former Project Manager of Golema Reka Project)

Ms. Gordana Cvetkovska, Trilateral UNDP GEF Project, Project Assistant

Mr. Nikola Zdraveski, UNDP GEF National Component Project Specialist

Mr. Aleksandar Blazevski, UNDP GEF National Component Project Assistant

UNDP Office in Resen provided logistical and organizational support during evaluation field mission in Resen (organization of meetings with stakeholders, use of 4-wheel-drive vehicle for site visits, office space and resources).

The contacts with UNDP Office team have been very useful due to support in provision of Project documentation, publications and brochures, insights into issues and developments in project implementation etc. The cooperation among various UNDP Projects, Resen Office with UNDP CO, as well with other ongoing projects in the region was clarified during site visits.

UNDP Office in Resen confirms good cooperation with the MoR, the Mayor, the Municipal Council and the Administration. Capacity of MoR (project management, environment) has been built/strehgthened as a result of cooperation with internationally financed projects. Needs further capacity improvements. Regarding water management, the overall capacity within the MoR is assessed as relatively weak, due to the fact that until recently they did not have any responsibilities in the sector.

MoR provides office space for the Projects as in –kind contribution. In return, some necessary repairs have been made.

ANNEX III PROJECT DOCUMENTS & REFERENCES

Project Documents

SDC, 2005. Macedonia:Restoration of the Golema River - UNDP GEF. Phase 1: September 1, 2005 - December 31, 2007(Opening credit: 01.09.2005 - 31.12.2006). MAC-BGE/HRM/SDO. 7F-02580.01

SDC, 2008. Cost Sharing Agreement between SDC and UNDP on "Restoration of Golema River" Phase 2

SDC, 2008. Macedonia:Restoration of the Golema River - UNDP GEF. Phase 2: 1 September 2008 - 31 August 2009. MAC-DODST/BGE/SCE. 7F-02580.02

SDC, 2009. Cooperation Strategy MACEDONIA 2009–2012

SDC, 2011. End-of Phase Report. MAC: Restoration of the Golema River UNDP – GEF. No SAP :7F-02580.02

UNDP, 2005. DRAFT Project Proposal. *Project Title:* Restoration of the Golema Reka

UNDP, 2006. PROJECT RESULTS AND RESOURCES FRAMEWORK (RRF)

UNDP, 2007. ANNUAL PROJECT REPORT (APR) 2006

UNDP, 2007. Information on the clean-up of drainage canals near Golema River (in Macedonian). To MoR. Информација во врска со чистењето на каналите за одводнување во близина на Голема Река

UNDP, 2007. Information on the status of "Restoration of Golema River" Project – to MoR (in Macedonian) Информација за статусот на проектот на УНДП „Уредување и заштита на Голема Река"

UNDP, 2007. RESTORATION OF GOLEMA REKA - implementation and impacts – PP Presntation. March 2007

UNDP, 2008. ANNUAL PROJECT REPORT (APR) 2007

UNDP, 2008. Final Report Activities and Results Restoration of Golema Reka Phase I. Donor: Swiss Agency for Development and Cooperation (SDC).

UNDP, 2008. Project Proposal. *Project Title:* Restoration of the Golema Reka- Phase 2

UNDP, 2009. ANNUAL PROJECT REPORT (APR) 2008

UNDP, 2009. Progress Reports: Jan-Mar 2009; Apr-Jun 2009; Jul-Sep 2009; Oct-Dec 2009.

UNDP, 2010. ANNUAL PROJECT REPORT (APR) 2009

UNDP, 2010. Progress Reports: Jan-May 2010; Jun-Sep 2010; Sep-Dec 2010.

UNDP, 2011. Background Information on the UNDP / SDC Cooperation on the Prespa Programme

UNDP, 2011. FACT SHEET Pilot Project for Biodegradable Waste Management in Prespa

UNDP, 2011. Final Report Activities and Results Restoration of Golema Reka Phase II. Donor: Swiss Agency for Development and Cooperation (SDC). Reporting Period: 15 September 2008 - 30 June 2011

UNDP, 2011. Pilot Project for Biodegradable Waste Management in Prespa Region. PP presentation, Jan. 2011

UNDP, 2011. Progress Report Jan-Mar 2011

UNDP. Communications & Monitoring Plan. Golema Reka Project

UNDP. Issues Log, Golema Reka Project

UNDP. Project Board ToR. Golema Reka Project

UNDP. Project Governance Structure. Golema Reka Project

UNDP. Risk Log. Golema Reka Project

Reports prepared in the course of Project implementation

Popovska, C., 2006. Rapid Assessment of the current environmental status of Golema Reka and its basin. Expert Report

Geing, 2007. *Report Task 1: Restoration of the riverbed and the riparian corridor.* Geing, Krebs und Kiefer Internatioinal and Others, Skopje

Book 00 General
Book 01 Hydrology
Book 02 Geodesy
Book 03 Report Geotechnical Investigations; Lab reports on investigations along Golema River
Book 04 Hydraulics on the natural riverbed –Golema River
Book 05 Main Design –River Training in Resen
Book 06 Main Design –River Training in Ezerani
Book 07 Main Design –Bridges & River Crossings
Book 08 Environmental Impact Assessment Study
Book 09 Expropriation

PointPro, 2006. Report Task 2: Mitigation of Problems Related to Solid Waste Management and Wastewater Pollution

Pharmachem, 2006. Report Task 3: Improvement of the Wetlands Condition

Pharmachem, 2006. Report Task 4: Improvement of the forest cover and protection against erosion in the river basin of Golema Reka

PointPro, 2006. Report Task 5: Mitigation of Problems Related to Current Land Use

Pharmachem, 2006. Report Task 6: Improvement of the river monitoring

Pharmachem, 2006. Report Task 7: Public awareness rising

Publications

Cukaliev et al., 2011. AGRI-ECOLOGICAL MEASURES IN APPLE PRODUCTION. Authors: Prof.Dr. O. Cukaliev, Prof.Dr. S. Lazarevska, Prof.DR. M. Kiprijanovski, Dr. D. Mukaetov, Doc.Dr. V. Tanskovic. UNDP, Skopje, 2011.

Popovska, C., Krstic, S. (2009) River Restoration Manual (in Macedonian: ПРИРАЧНИК ЗА РЕСТАВРАЦИЈА НА РЕКИ), UNDP, Skopje 2009

Popovska, C., Sekovski, D., Stavrić, V. (2010): *Problem Identification and Strategic Planning of River Restoration Projects*, Conference on Water Observation and Information System for Decision Support (BALWOIS 2010), Ohrid

Postolovski et al., 2008. APPLICATION OF GOOD AGRICULTURAL PRACTICES (GAP) IN APPLE PRODUCTION. Authors: Prof.Dr. M. Postolovski, Prof.Dr. O. Cukaliev, Dr. D. Mukaetov, Prof.DR. M. Kiprijanovski, Prof.Dr. S. Lazarevska, V. Gjamovski, V. Tanskovic. UNDP, Resen, 2008. CIP: 634.10 : 632.9-295.1(035)

Sekovski D. (2010). *River Corridor Restoration – Principles, Processes, Practices*, Faculty of Civil Engineering, Master Thesis

Sekovski, D. (2011), *The Riparian Corridor Concept – A Valuable Alternative to Traditional Riverbank Stabilization Techniques*, Eleventh International Symposium on Water Management and Hydraulic Engineering (WMHE 2011), Gdansk, Poland (published in the 'Current Events in Hydraulic Engineering' book by the Gdansk University of Technology)

Sekovski, D., Popovska C. (2009), *Restoration Measures and Practices in the Prespa Region*, Eleventh International Symposium on Water Management and Hydraulic Engineering (WMHE 2009), Ohrid

Other

EC, 2004. AID DELIVERY METHODS. Volume 1: Project Management Guidelines. European Commission, 2004

MoR 2011. "Two years of dedication 2009-2011" publication

USAID, 1996. Performance Monitoring and Evaluation- TIPS. USAID Center for Development Information and Evaluation.

World Bank, 2004. Monitoring and Evaluation, Some Methods, Tools and Approaches