First implementation project of the Programme of landscape revitalization and integrated river basin management in the Slovak Republic for 2011

Social responsibility for the protection of the area and landscape of the Slovak Republic against floods and drought, as well as the necessity to implement integrated flood management in order to avoid the risk of more frequent natural disasters, motivated the SR Government to adopt provision No. 744/2010 of 27 October 2010 regarding the Programme of Landscape Revitalization and Integrated River Basin Management in SR and the draft for implementation project 2010 (hereinafter PRK IMP). In point B.2, the Government requested the Government Representative for Local Government and for Integrated River Basin and Landscape Management (hereinafter representative) to prepare and submit the first implementation project, PRK IMP (hereinafter first implementation project) for 2011 to the SR government session.

The first implementation project is based on principles, rules and objectives of the PRK IMP applied in the implementation project for 2010. However, it has a wider scope and it proposes implementation of projects for a group of approximately 200 villages. Its financing is provided within the approved limits of the State budget stated in the Budget Chapter of the Government Office SR.

Objectives of the first implementation project

The objective of the first implementation project for 2011 is to create, activate and systematically implement a minimum of 6 million m³ of water retention elements in mountain and foothill areas of forest-agricultural landscape in Slovakia. A particular aim is to create and build landscape water retention systems, terrain elements, facilities and technical solutions in forest, agricultural and urban areas in selected village locations, with the abovementioned cyclical rainwater retention capacity, which will then be operated and maintained.

In locations where the projects will be implemented, the negative impact of local flash flooding will be decreased and the level of flood risk will also decrease in endangered areas. Several indicators, benefits and the effects of implemented measures will be monitored and assessed during and after the implementation of projects. In river valleys where the projects will be implemented, flood flow will decrease along with the erosion process in the landscape. An increase in ground water resources in landscape structures is estimated which will also strengthen the yield of springs and improve the minimum flows in smaller streams. Water evaporation will improve and photosynthesis will strengthen.

The protection of carbon in soil will increase via improvement in the level of moisture in the soil and absorption of CO_2 from the atmosphere will also increase by extending the level of vegetation and countryside coverage against the effects of sun radiation, which will also decrease the production of detectable heat in the transformation of solar energy in the landscape. This will contribute towards lessening the impact and elimination of some cases of climate change in Slovak conditions. These indexes, benefits and effects of local projects and revitalisation measures will be an opportunity for Slovak scientific teams to obtain knowledge of international significance. Revitalisation of the landscape will have a positive effect upon the hydrological regime, restoring the climate and protecting biodiversity. Water retained in landscape structures will also cyclically improve the retention ability of the soil/area, soil erosion by water will decrease as well as transport and sedimentation processes in waterways (elimination of silting) in areas in which the revitalisation measures are being implemented.

Another project objective is to force and socially support the creation of employment at community and regional level. The creation of water retention elements and the implementation of revitalisation measures will require the creation of a minimum of 2,500 jobs of a seasonal and temporary nature in 2011, including extending existing specialist capacities. This will also extend the work skills and knowledge necessary for revitalisation of the landscape.

Locations for project implementation and description of measures

The first implementation project will be carried out in those parts of river basis where the amount of ecosystem damage significantly contributes towards flooding, drought and the production of detectable heat then emitted into the atmosphere with a negative effect upon climate change. The greater part of Slovakia ranks amongst risk areas from the viewpoint of medium or high susceptibility to flooding as well as from the viewpoint of various types of damage to the landscape structure. In 2011, the first implementation project will be implemented in those parts of river basins and damaged countryside with a significant and repeated risk of flooding. The first implementation project will mainly focus upon villages and related areas in the upper parts of river basins, mainly mountain and foothill areas and regions.

Criteria and their significance for including villages into the first implementation project are as follows:

1. 45% - historic or regularly repeated occurrence of flash flooding,
2. 35 % - village is situated in a location with a high potential risk of flooding, in accordance with modelled potential for the occurrence of flooding. A map of regional and local potential for flooding in the area of Slovakia[1] is at Appendix No. 1,
3. 10% - location of a village in the upper part of river basins, so the implemented measures will positively decrease the risk of flooding for highest possible number of villages in the given river basins,
4. 10% - the ratio of documented unemployment is taking into account so citizens of villages with a high ratio of documented unemployment could contribute towards revitalisation works.

The submitted methodology of the whole flood potential of Slovakia was prepared on the basis of the work of J. Minár and Co. (2005). The mentioned work focuses upon the presentation of methodology and results for evaluating the flood creation potential within the whole of Slovakia. It also includes a general description of the modelling of hydrological processes. The method presented in this work is a good alternative for fast, effective and relatively financially undemanding but still sufficiently reliable analysis of flood risks of larger areas. The actual calculation of total potential for flooding took place in the technological environment of Geographic Information Systems (GIS) in the following steps with the stated data:

[1] Minár, Jozef; Trizna, Milan; Barka, Ivan; Bonk, Radoslav. 2005. Povodňový potenciál na území Slovenskej republiky., [Flood Potential on the Territory of Slovak Republic]. Bratislava : Geo-grafika, 2005. 126 s. ISBN 80-968146-5-6.

- calculation of the morphometric potential (incline, horizontal articulation of the topography, slope length, speed of surface run-off),
- partial synthetic geological potential (infiltration and drainage properties of the soil, retention properties of the land cover, breaking effect of land cover, size of river basin, shape of river basin),
- overall potential of the land for the creation of flood situations (climatic and hydrological characteristics and data).

The selection of villages will take place on the basis of application by the village for the first implementation project via a form which they send to the Government Office SR, under the presumption that they meet all the criteria and conditions for this implementation project, as well as meeting the term for use of the financial allocation for the first implementation project.

Revitalisation works for water catchment elements and systems in damaged forest-agricultural landscape with a scope minimum of 30,000 m^3 will be implemented in each village.

Types of damaged countryside which require revitalisation are documented at Appendix No. 3 to the first implementation project. The Appendix also documents the recommendations for revitalisation measures which will be binding for public procurement for the following damaged types of land:

- sliding lines, roads and eroded roads in forests,
- eroded roads in agricultural land,
- erosive gutters, gullies and gorges, in forest and agricultural land,
- permanent grassy areas and meadows with a slope incline over 15 %,
- arable soil in agricultural land with a slope incline over 10 %,
- on small, unnamed waterways in forest and agricultural landscape.

In individual village cadastre locations, water retention measures will be implemented, e.g.:

in forest locations, mainly:

- indentations on roads and sliding lines,
- sink holes and tracks on roadsides,
- catchment pools in road channels,
- barriers of waste wood on slopes,
- irrigations channels at interfaces between forest and agricultural land,
- increased forested land,
- sealing and damming of gullies.

on agricultural land, mainly:

- willow plaiting, restoration of boundaries,
- contour line irrigation furrows,
- sink holes, catchment ponds, restoration of wetlands,
- sealing and damming of gullies,
- vegetation measures, suitable crops, trees or bushes
- revitalisation of wrongly designed artificial drainage channels

After mutual agreement between villages and administrators of small waterways, anti-flood measures will be implemented in the form of construction of lateral objects on small waterways, e.g.:

- channels (up the level of vertical alignment – for fixing the bed),

- thresholds (height up to 30 cm – providing vertical alignment of beds necessary against cratering),
- gradation (from 120 – 200 cm – levelling vertical alignment, catching floating objects),
- damming(to a height of 3 m – as dry polders or partially filled with water or water reservoirs),
- restoration of hydro-morphology of small waterways and meanders.

These measures mainly represent local revitalisation, recultivation, anti-erosion and water catchment measures. In the majority of cases, they do not reach the minimum threshold values defined in Appendix No. 8 to Act No. 24/2006 coll. on evaluation of impacts upon the environment; therefore they are not under compulsory assessment nor discovery proceedings in accordance with the given regulation. In accordance with the appropriate Act, particular proposals for measures (projects) proposed for individual villages will be the subject of local assessment.

Management of the first implementation project

Management of the first implementation project will be carried out by the Executive Manager of the Programme of Landscape Revitalization and Integrated River Basin Management in SR in cooperation with the Government Representative for Local Government and for Integrated River Basin and Landscape Management and other interested departments of the Government Office SR.

Budget, financial tools and forms of task assignment

The first implementation project for 2011 will be carried out from State budget means approved by Act No. 498/2010 coll. on the State budget for 2011, Appendix No. 3 – State Budget Expenses for 2011, the chapter of the Government Office SR programme: 06P020H Revitalisation of the Landscape and provision of the Government SR No. 667/2010 point C.1. and the schedule of binding state budget indexes No. 06/05/2011-EO of 12 January 2011.

From available financial means, the sum of 24,000,000 EUR is earmarked for the first implementation project. The first implementation project will be financed in the scope necessary for fluent implementation and maintenance of maximum effectiveness and efficiency of expended financial means. The conditions for the provision and use of financial means will be addressed in individual contracts for implementation of the first revitalisation project between villages and the Government Office SR. Unused financial means from the proposed allocation for the first implementation project will be used in the second implementation project of PRK IMP for 2011, which will be submitted to the Government session in May 2011.

On the basis of a contract for implementation of the first implementation project between a village and the Government Office SR, the level of allocated financial means will depend upon volume of constructed water retention elements on the land with a stated amount of €4 per m^3 of the constructed water retention elements, and the successful supplier tender price. The maximum level of support for one village is stated as 120,000 EUR (the sum includes VAT). In 2011, the measurable index for the first implementation project will be the building of a minimum of 6 mil. m^3 water retention elements and systems in the country.

The sum of 120,000 EUR will be invested in each village which joins the first implementation project. Within the scope of PRK IMP, it will be necessary to build a minimum of 30,000 m^3

of water retention features from these financial means. The final volume of water retention measures in villages will come from public procurements for selection of a revitalisation works contractor, which will take place before the signing of the contract. It may be possible that water retention measures in excess of 30,000 m^3 may ensue from a 120,000 EUR tender price. The Government Office SR will only sign a contract with those villages which, from the public tender for revitalisation works, manage to select a suitable supplier who is able to implement a minimum of 30,000 m^3 in the given area. Only those measures which are actually implemented will be financed.

In self-supporting implementation of the revitalisation of its cadastre as well as in the use of the successful contractor for the revitalisation works, a village will use active measures in the employment market via §50j of Act No. 5/2004 coll. on employment services as amended – "A contribution towards the support of employment for implementation of measures for the protection against floods and resolving the consequences of an exceptional situation," (hereinafter "contribution towards employment support"). This active measure in the employment market synergistically follows the PRK IMP which comprehensively deals with the issues of flood prevention, revitalisation of the landscape and increasing the resistance of the land against climate change by improving its condition, structure and management. Applying this active measure for the employment market when implementing the project will be one of the conditions for signing a contract between a village and the Government Office SR.

The primary objective of the first implementation project is implementation of measures in the area of flood prevention, revitalisation, recultivation, anti-erosion and water retention measures with measurable indicators for the creation of a minimum of 6 mil. m^3 water retention features in landscape ecosystems. Despite that fact that these measures are generally known, they have not been applied in normal practice, have not been sufficiently applied or have not been applied whatsoever. Due to the overall nature of the first implementation project and its primary objective, this project must not only be assessed from an employment viewpoint or via standard market parameters. If this was a standard product, the state would not need to interfere in this issue in any way. Just the opposite, the environment would be damaged. However, with the current situation, increased risks and threat of damage, traumatised inhabitants requested an increased level of State intervention, in response to which the Government approved the PRK IMP in 2010. Therefore, the potential contribution of the project must also be assessed from other viewpoints, not only from the viewpoint of exactly measurable economic effectiveness. The project is bringing a whole range of indirect effects which cannot be precisely or economically broken down. The following must be stated in direct relation to the economics of the project:

- an indirect but causally related effect will be a decrease in damage and induced expenses for the State arising from direct and indirect ramifications for property in private and public ownership (even today the State has some unpaid arrears),
- due to the nature of the measures, actual State expenses are and will be significantly lower than it appears at first sight. On the basis of qualified estimation, their final amount payable by the State can be expected at a level of approximately 61% of budget expenses. The stated facts come from the simple nature of the works when implementing measures in which the proportion of personal expenses will not fall below 80% on average, therefore 39% of used financial means will subsequently quickly be returned to public funds in the form of deductions and VAT on expenditure (implementation itself and personal expenditure of such employed persons).

The creation of new jobs is the ***secondary objective***, but in this area it will also bring significant benefits since it will also create conditions for employment opportunities for disadvantaged groups of inhabitants who really cannot find employment in the standard employment market. In addition, in project locations with a significantly unbalanced employment market, where supply of labour strongly exceeds the demand, less rewarding jobs are occupied by manpower that, in another market, would be able to secure better employment. In these locations, there really is no employment market of which to speak. Another undisputed contribution is the fact the resources will not be spent for measures which "on another day would be blown away by the wind or washed away by the rain", which is what has taken place in the majority of public works performed to date. From a material viewpoint, finances will be invested in equipment with a longer lifetime.

Due to the project scope and the unified system of implementation, the binding methodology of the Government Office will clarify all necessary requisites and steps for solutions and methods to allow exact procedures in each case and in individual projects. In a statistically relevant sample, the project will allow verification, optimisation and standardisation: performance (work consumption), model and effectiveness of management at local level, model and effectiveness of management and coordination at regional and national level, methods of reporting and measurement of work and material consumption, and preparation of a price calculation for a nominal unit of individual measures in various terrain conditions. Such achieved knowledge will allow more precise planning of allocation of resources and methods of implementation for further stages and projects of the Programme of Landscape Revitalization. The submitted project is the starting phase of the entire Programme and estimates implementation of 2.4% of the target value of created water retention measures in the country. Despite its almost pilot nature, it does not take into consideration any "teething problems" such as softening the entry and output parameters of performance.

Benefits of the first implementation project

Activities will create corrective and preventative measures mainly in areas where flood sources are due to unsuitable economic activities and inadequate intervention with the countryside, especially in forests and fields, but also in urbanised areas. Along with these measures, standard water management activities will still be ongoing focusing upon maintenance and administration of waterways, building anti-flood features and facilities in waterways and in inundation areas which are under the authority of water administration or melioration systems. These activities compliment each other. This creates the synergy effect of effective protection against floods and against the consequences and impact of climate change and events. Even in the phase of identification and proposal (then also during implementation), measures proposed and implemented via the first implementation project will be consulted and approved by the appropriate administrator of the small waterway or by the appropriate owner or land administrator.

Measures implemented within the first implementation project will decrease rainwater drainage which will flatten flood waves from the flood source area in the landscape. Implementation of the first implementation project will bring new knowledge and comprehensive specialist information. This will become an impulse for further innovation and development in this area which will also support environmental research and development of new techniques and technology. Implementation of the measures in individual locations will also decrease flood risks in villages situated lower in river basins. A wide scale increase in the ability of water retention will positively effect restoration of ecosystem functions of the

landscape. The selection of location is also designed to decrease the risk of drought, the necessity to restore the vegetation cover of the area and increase the water regime of the countryside which will have a positive effect upon ecosystems followed by a decrease in risks in the given river basins and areas.

A very important effect will be the restoration of inhabitants' trust that it is possible to implement a system of measures for decreasing risks with the participation of communities and local inhabitants along with the participation of local manpower in implementing the measures. In the given villages and areas, implementation of the first implementation project will create more than 2,500 employment opportunities during its implementation, mainly in regions with high unemployment (see the map of SR unemployment – Appendix No. 2). By using the active measure of the employment market (in accordance with §50j of Act No. 5/2004 coll.) we estimate creation of a further circa 2,500 seasonal job opportunities. Clarification of the number of such created jobs will be revealed when contracts are signed. Implementation of the first implementation project opens the basis for a stable work environment and capacities focusing upon long term revitalisation of the landscape and integrated management of river basins and water resources, mainly consisting of village inhabitants, companies, associations, administrators and land users, as well as other local capacities. Employment of people for the preparation, implementation and maintenance of anti-erosion and water retention measures in the area as well as in cadastres will create useful employment which will be an impulse for economic and social development in the future. At the same time, the first implementation project will significantly support the building of specialist, technical and management capacities in the field.

GOVERNMENT OF THE SLOVAK REPUBLIC

PROVISION OF THE GOVERNMENT OF THE SLOVAK REPUBLIC

No. 183

of 9 March 2011

for the proposal of the first implementation project of the **Programme of Landscape Revitalization and Integrated River Basin Management** in the **Slovak Republic 2011**

Material number:	5697/2011
Submitted by:	Government representative SR for Local Government and for Integrated River Basin and Landscape Management

The Government

A. approves

A.1. the first implementation project of the Programme of Landscape Revitalization and Integrated River Basin Management in SR 2011 (hereinafter "first implementation project PRK IMP 2011");

B. instructs

the Government Representative SR for **Local Government and for Integrated River Basin and Landscape Management**

B.1. to secure implementation of objectives stated in the first implementation project PRK IMP 2011

continuously

B.2. to evaluate progressive results of the first implementation project PRK IMP 2011 and submit a summary report regarding its implementation to the Government session

by 31 March 2012.

To be carried out by: the Government representative SR for Local Government and for Integrated River Basin and Landscape Management