United Nations Development Programme

Project Proposal

For submission to Government of Japan

Project Title: **Contribution to restoration of Lake Uromiyeh by modelling local community engagement in sustainable agriculture practices and critical biodiversity conservation**
(Special component of UNDP's Conservation of Iranian Wetlands Programme)

Start Date: 1 March2014

End Date: 28 February 2015

Total Budget: US $ 1,000,000

Brief Description

Iran's diversity in climatic conditions and its rich aquatic and terrestrial biodiversity and ecosystems are rooted in its unique geography. Pressure has been put on environmental resources and biodiversity due to persistent droughts, heavy stress on and pollution of scarce water resources, air pollution in urban and industrial areas, as well as degradation of rangelands, threats to wild life and biodiversity, natural resources overexploitation and soil erosion. Located in the dry belt of the planet Iran is usually suffering from low precipitation and high temperature which leads to water evaporation and water shortages.

Wetlands are usually among the very first vulnerable ecosystems affected by water shortages. Water limitation normally leads to water allocation rivalry and natural ecosystems & initially wetlands usually suffer when in competition with development. As a result of this situation a number Iranian wetlands across the 83 protected areas and 24 Ramsar sites are currently under pressure. These combined impacts have led to considerable shrinkage of wetlands, and in some parts of the country major wetlands are entirely dried out, with serious impacts on biodiversity and local communities' livelihoods.

Lake Uromiyeh (LU) is a vast hyper-saline wetland NW of Iran shared between the provinces of East and West Azerbaijan (Map1). The Lake is a National Park, one of the largest Iranian Ramsar Sites, UNESCO Biosphere Reserve, and is the largest inland lake in Iran. There are about 100 islands in the lake; the three bigger ones (i.e. Ashk, Espir and Arezou) are supporting populations of IUCN red listed endangered species of Persian Fallow Deer as well as Moulfon as a vulnerable species. The wetland also supports a number of other biodiversity species including 115 bird as well 120 plant species.

In addition to biodiversity enrichment the lake has several other functions supporting local communities livelihoods to settle in the surrounding areas. There are more than 5 million inhabitants living in the basin and threats of drying lake will have tremendous impacts on their daily livelihoods.

The lake is shrinking at an alarming rate which has led to drying of more than 75% of its total 5000 Km2 surface area. The underlying problem is that a range of users regularly extract water from the basin that feeds the lake. In addition the outflow, which is mainly evaporation, has vastly exceeded the inflow in recent years. Add to this a recent drought, and, as a result, the water levels keep declining (Fig1.) Thus Lake Uromiyeh is in a sudden threat of turning into irreversible situation where the dimension of its impacts would gradually spread from biodiversity dimension into socioeconomics where livelihood and health of the surrounding communities would be affected. As a result the lake has been drying up and salt particles are being blown around to adjacent crop lands. This will gradually increase soil salinity and contribute to making the agriculture of the entire basin unsustainable.

There have been several attempts by the government of Iran to address the problem including development and adoption of Lake Uromiyeh Integrated management plan

In this critical situation although there have been a number of attempts conducted to address the issue, there is still lots to do. Currently Integrated Management plan of Lake Uromiyeh basin developed under Conservation of Iranian Wetlands Project (CIWP), a joint UNDP - GEF initiative in cooperation with Government of the Islamic Republic of Iran led by the Department of Environment which is under implementation in multiple phases over the last 8 years. The Integrated Management plan adopted by the cabinet contains a set of priority activities. Further the new cabinet has also adopted a list of 19 urgent actions which would contribute into restoration of the lake. Figuring in both priority lists are agriculture water saving as well as urgent biodiversity conservation actions. Currently agriculture sector consumes more that 87% of the whole basin water uses with a rather low efficiency rate. Hence there is a good scope for water saving in the area releasing more water discharge to the lake. This is also considered as the most critical step and can lead to revival of LU itself.

The proposed project would effectively contribute in restoration of Lake Uromiyeh through local community and farmers engagement to promote sustainable agriculture and effective reduction of water consumption at the field level which would lead to increase of inflow to the lake as well as a few direct biodiversity protection practises focusing on the island habitat of two main IUCN red list species.

I. PROJECT OBJECTIVE AND OUTPUTS

Technical Background

Challenges in the management of Iran's wetlands have been exacerbated by unsustainable use of water resources, persistent droughts and climate changes. These combined impacts have led to considerable shrinkage of wetlands, and in some parts of the country major wetlands are entirely dry, with serious impacts on biodiversity and livelihoods.

The project will use CIWP best experiences and lessons learned (establishing ecosystem based management approach and developing a detailed drought risk management model) as well as, demonstrating sustainable agriculture practices in the framework of Integrated Pest and Crop Management.

Results of a few sustainable agriculture pilots demonstrated by CIWP in close cooperation with the government and good public participation revealed that using participatory sustainable agriculture will not only increase the water efficiency in by average 35%, but also would reduce chemical uses tremendously (i.e. more than 90% fertilizer and almost 100% pesticides). At the same time the yield has increased by more than 17%. As a result of this practice demonstrated in a few locations in Iran including a village in Lake Uromiyeh basin, there is a great opportunity for contribution in restoration of Lake Uromiyeh by saving more that 35% of water consumption in *the sector which has a share of more than 87% in the whole basin water demand.*

The main approach of the sustainable agriculture would be Integrated Participatory Crop Management (IPCM) which includes 9 techniques summarized in table 1. All of the listed 9 techniques would be applied in the farmlands as per prevailing condition and need as well as composition of technical treatments might be different based on farmlands specifications and current cultivation practices.

Key techniques of Integrated Participatory Crop Management approach

No	Action
1	**Participatory Cycle Management** This is a key fundamental step by which the participatory platform will be established to enable the key stakeholders as well as technical management team to work together implementing IPCM practices. As a cycle management, this process includes following key techniques and participatory tools and approaches running though whole period of the project; 1- Local community engagement, team formation and trust building 2- Participatory Rural Appraisal (PRA), Rural Rapid Appraisal and Participatory Geographical Information Systems, 3- Baseline agriculture and environmental analysis 4- Developing a common roadmap and supporting participatory organizational arrangements
2	**Agro Ecosystem Analyse** This technique aims to consider ecological capacity within the agricultural planning while taking into account the socioeconomic characteristics. Economic Gain Threshold of the farmlands will be calculated ensuring livelihood sustainability of farmers while implementing IPCM measures. This would enable inclusion
3	**Project Design Management / Participatory Planning** Under this technique, outputs of previous stages including A). Environmental conditions, B). Local community traditional knowledge, expectation and needs, C). Modern techniques and scientific solution will be compiled to develop detailed farmland management plans with a participatory approach reach to the common agreement among key stakeholders

No	Action	
4	**Integrated Crop, water and Soil Management (ICWSM)** This technique includes a series of farm technical practices mainly focusing on agriculture water consumption management through targeting improving irrigation efficiency, Soil conservation, farmland evaporation control, erosion reduction and production costs reduction.	No/Conservation tillage
		Soil Organic Matter Management
		Soil Biological Factor Management
		Planting Formation
		Farm water management
5	**Community Integrated Pest Management** Main output of this technique would be pesticides use reduction by introducing nonchemical pest control practices. The main components of this technique would be; - Introducing infection prevention measures - Tracking and pre-announcement of Infestations and infection - Biological control - Quarantine	
6	Agricultural Waste Management Under this technique, farmlands wastes would be processed to be used as fertilizers to promote soil texture while also increasing organic matter of the soil. At the same time this would also reduce farmland evaporation potential as well as water consumption	
7	**Occupational Health Management (OHM)** Considering new agriculture measures being implemented in the field, this technique includes practices which will improve farmers' occupational health.	
8	**Learning by doing and participatory technology Management** The main target would be promotion of farmers capacities, enabling them to take an active role in the whole IPCM process while also capturing lessons learned by themselves for continuous sustainable agriculture in the region.	
9	**Networking /Marketing based on Best Good Agriculture (BGA) practices** This would be a supporting technique which would focus on Formation of Community Based Organizations mainly in two key areas; A). promoting sustainable agriculture practices at the basin level B).Contributing to water management at local level and agriculture product marketing at regional and national level	

Objective:

- *Contribution in lake Uromiyeh restoration via modelling local community engagement in sustainable agriculture practices and biodiversity conservation of critical species*

Outputs

1. *Agricultural land of 40 villages (a average 1000 ha each village) in Lake Uromiyeh basin introduced to sustainable agriculture practices resulting at least 35% [1]water saving*
2. *Local community awareness and capacities for their role in LU restoration and sustainable agriculture raised in pilot site.*

[1] Current average water consumption per hectare for each growing season is about 10500 m^3. Increasing irrigation efficiency by 35% across 40,000 hectares would result in 147,000,000 m^3 water saving.40,000 ha is about 10% of the total irrigation farmlands of the basin (total is about 480,000 ha). If this model is successful and up-scaled in the whole basin it can contribute to saving more than 1.5 BCM which is half of the annual water requirement of the lake (3.1 BMC).

3. *Water harvesting options reviewed and at least one piloted in the three key islands of lake Uromiyeh ensuring sustainable water supply for conserving biodiversity*[2]

II. MANAGEMENT ARRANGEMENTS

The proposed project will be implemented as a special stand-alone component of the UNDP/ Government of Iran Conservation of Tranian Wetlands project Phase II (Up-scaling) already operational with the Department of Environment as the implementing Partner under NIM modality. All UNDP NIM modality requirements would be applicable to this project ensuring efficient implementation of it.

CIWP project team would be responsible for facilitation of the process however new staffs would be hired if required by the Implementing Partner (i.e. DOE, NPD of the wetlands project).

At the same time, existing local/regional/national stakeholder partnerships, institutional arrangements and capacities built for inter-sectoral management of the Wetlands project would also be available fully for implementation of this proposal. The Project governance will be assured through continuation of the inter-sectoral CIWP Project Steering Committee, which is chaired by DOE with UNDP as a full member and will meet twice each year and at the regional level Lake Uromiyeh Regional Council, would also be engaged. The budget for this project (special component of CIWP – Phase II project) will be provided by the Government of Japan. It will be implemented by UNDP under he ongoing CIWP – Phase II project. The handling procedures of interest income and unspent balance are in line with the policies and procedures of Japan-UNDP partnership fund.

Key national and international agencies:

The major national and international agencies having roles in project implementation and oversight are identified below:

I. *United Nations Development Programme (UNDP)*
II. *DEPARTMENT OF ENVIRONMENT*
III. *MINISTRY OF AGRICULTURE JIHAD*
IV. *MINISTRY OF ENERGY*
V. *OTHER PARTICIPATING NATIONAL AGENCIES*
VI. *LOCAL AUTHORITIES*
VII. *RESPECTIVE LOCAL COMMUNITIES, NGOS, CBOS*

III. MONITORING AND REPORTING

The project's M&E programme will be guided by a set of tools. Throughout the project a detailed activity planning and monitoring system will be developed and implemented. Based on existing

[2] There are more than 100 islands in the Lake Uromiyeh but 3 of them are habitat of Persian fallow deer *(Dama mesopotamica) – an* IUCN endangered species as well as Mouflon *(Ovis orientalis gemelini)*. Limited water supplies of these wetlands are affected in dry seasons. Based on the results of the initial study under output 3, some water harvesting and/or water storage options such as underground water storage tanks would be implemented. It could include implementation of surface runoff management in some parts of the islands and storing collected water with specific capacity using it drinking water supply for wildlife of the islands during dry seasons.

M&E system within Wetlands Project Up-scaling, an intricate system of quarterly activity planning and monitoring, supported by a monitoring calendar (with as highlights a quarterly review of activities related to planning, monitoring, reporting an evaluation) will generate the information necessary for progress monitoring and made it possible through the feedback loop to correct for past quarter's weaknesses and delays in next quarter's activity plan.

The indicators will be defined in the project and are adaptable in the sense that they may be subject to revision during the course of project implementation, as project goals are adapted to changing circumstances

The progress against planned targets and measurable indicators equally included the monitoring of risk assumptions (external to the management decision but nevertheless a necessary condition for achievement of project objective and outputs). This provides the project with the opportunity to make stakeholders aware of their critical role in achieving the objective of the project. Moreover it provides project management with good quality updated information in order to make well-informed decisions.

In addition to the aforementioned monitoring and reporting requirements, an interim report (with a financial statement indicating utilization of resources) will be submitted at the mid-way point i.e.September 2014 and a final report with a financial report will be prepared and submitted upon completion of the project activities by March 2015. Both reports will contain photographs that will record progress achieved. The project will be included in the annual external audit exercise (March-April) of the UNDP Tehran office and an audit report prepared

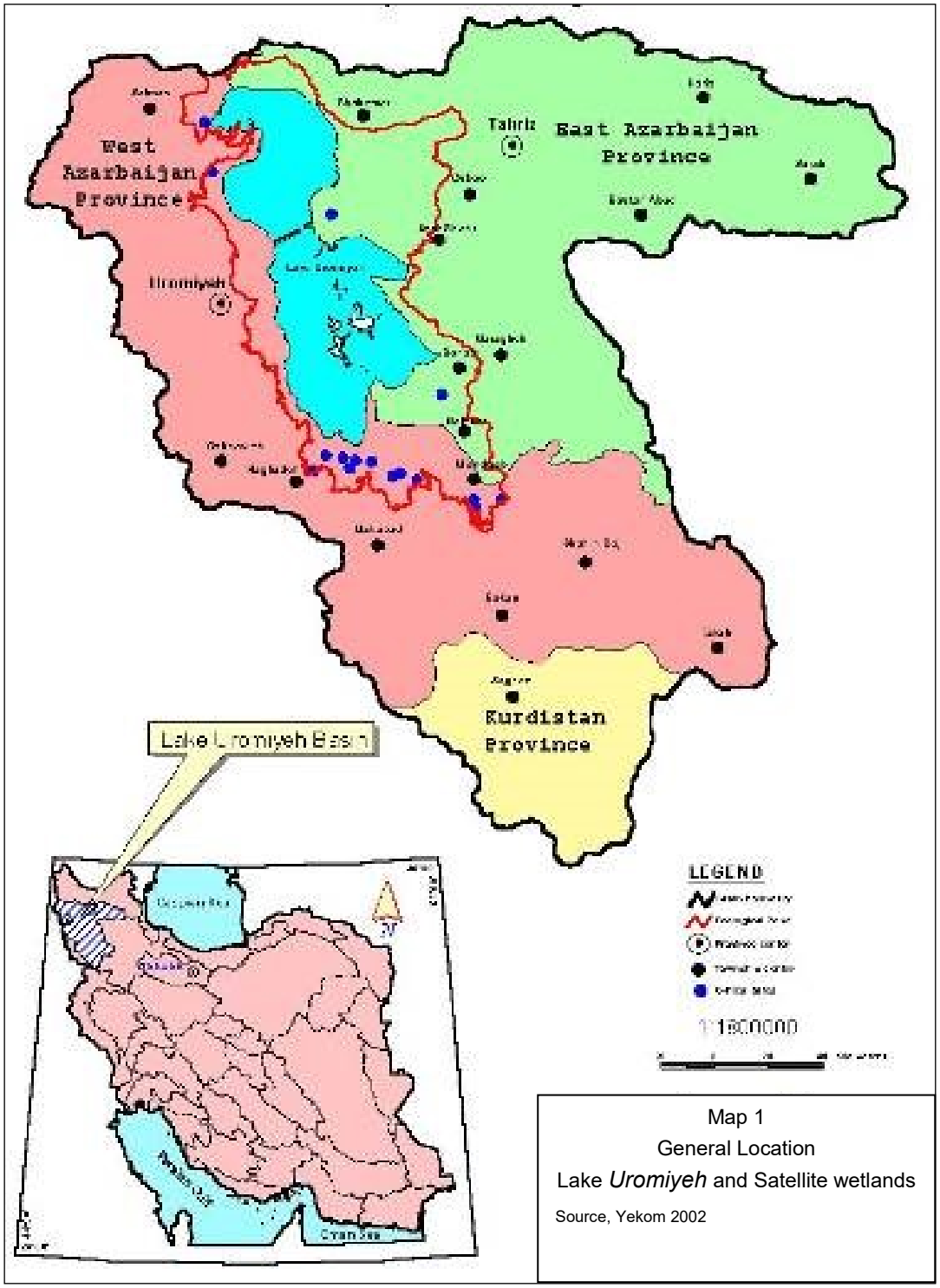
Special steps will be taken to appropriately and adequately reflect the support from Japan to this project. These will include - but not limited to - web-stories on the UNDP website about the project at various stages, a launch event at the commencement of the project clearly highlighting Japan's support with participation of senior Government officials from the respective provinces, acknowledgement of Japan's support in the pilot villages where the activity is being implemented with banners / signage that will contain the flag of Japan apart from the UNDP logo and national (Iran) symbol. All t*hese logos (including the Japanese flag) could also be located on all respective reports (this is the same as we are practicing for GEF funded projects with GEF, UNDP logos on the reports and signboards). At the conclusion of the project sharing of the results with media and senior Government functionaries in Tehran and the provinces acknowledging Japan's support to the pilot effort and seeking scaling up by the Government.*

IV. WORK PLAN & BUDGET

EXPECTED OUTPUTS	PLANNED ACTIVITIES	TIMEFRAME				PLANNED BUDGET US$ (Japan Embassy)
		Q1	Q2	Q3	Q4	
Output 1 *Agricultural land of 40 villages (in average 1000 ha each village) in in Lake Uromiyeh basin introduced to sustainable agriculture practices resulting at least 35% water saving*	Organizing local formation of trained farmers	*				35,000
	Conducting initial baseline agriculture field studies	*				50,000
	Developing implementation programme and Methodology approval for sustainable agriculture in each village	*	*			30,000
	Implementation of sustainable agriculture programme including the 9 IPCM techniques		*	*	*	500,000
	Project coordination, monitoring, reporting and regular follow ups (includes office expenses and possible staff requirement)	*	*	*	*	30,000
	Developing and implementation of monitoring and evaluation programme including monitoring equipment [3]		*	*	*	135,925
Subtotal Output1						780,925
Output 2 *Local community awareness and capacities for their role in LU restoration and sustainable agriculture raised*	Developing and implementation of sustainable agriculture Training of Trainers programme	*	*	*	*	15,000
	Production and dissemination of informative and training materials on local community role in restoration of Lake *Uromiyeh* and sustainable agriculture		*	*	*	40,000

[3] This would mainly include field required equipment for implementing sustainable agriculture practices at farmlands level enabling calculation and monitoring of water consumption (e.g. by using water meters, and parshall flume etc), monitoring soil humidity (e.g. using tensiometer) and other practices. At the same time as required (depending on available water resources monitoring networks) ground and/or surface water monitoring equipment would also be included under this activity.

EXPECTED OUTPUTS	PLANNED ACTIVITIES	TIMEFRAME				PLANNED BUDGET US$ (Japan Embassy)
		Q1	Q2	Q3	Q4	
	Documentation of best practices and lessons learned to develop a model for further advocating and up-scaling of sustainable agriculture at basin level				*	20,000
Subtotal Outcome 2						75,000
Output 3 *Water harvesting options reviewed and at least one piloted in the three key islands of lake Uromiyeh ensuring sustainable wildlife water supply*	Reviewing impacts of drying lake on biodiversity of the 3 main islands of the lake	*				10,000
	Reviewing possible alternative wild life water supply in the key islands including water harvesting option		*			20,000
	Implementation of at least one pilot alternative wild life water supply			*	*	40,000
Subtotal 3						70,000
GMS (8%)						74,074
Total						1,000,000



Map 1
General Location
Lake *Uromiyeh* and Satellite wetlands
Source, Yekom 2002

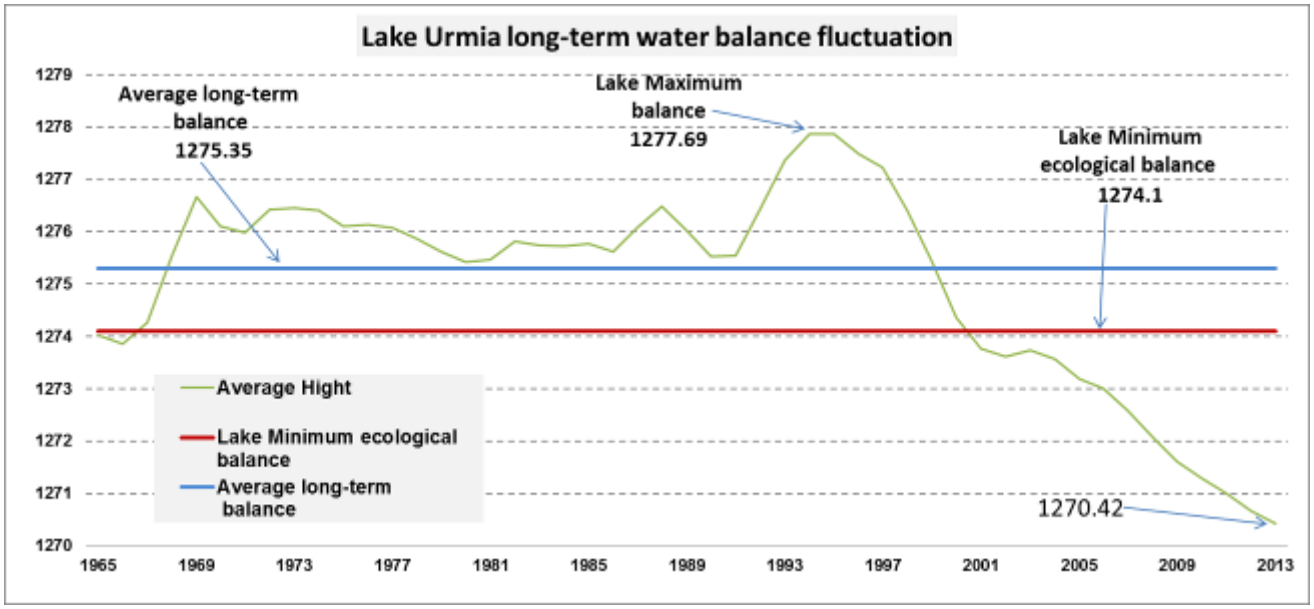


Fig.1- Average fluctuation of water level at LU (1965-2013)