



# EVERY DROP MATTERS

A partnership for safe water in 21 countries





### **Every Drop Matters**

This publication highlights the achievements of Every Drop Matters (EDM), a six year partnership programme between the United Nations Development Programme (UNDP) and Coca-Cola that improved water supply and sanitation and promoted responsible water resource management through more than 80 projects supporting communities in 21 countries around the world.

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### **Disclaimer**

The views expressed in this publication are the authors' and do not necessarily represent those of the United Nations, including UNDP, or its Member States. The designation used, and boundaries shown, do not imply official endorsement or acceptance by the United Nations.

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## FOREWORD

**Andrew Hudson, *Head of Water and Oceans Programme, UNDP***

Water is fundamental to all aspects of global development. It sustains all life, ensures food security, is vital to many industries, and has an intrinsic cultural value. Yet water resource challenges throughout the world are some of the most pressing problems facing the global community. Recognising the urgent need to find and demonstrate solutions to these problems, UNDP and Coca-Cola came together to create the global Every Drop Matters (EDM) partnership.

Since 2011, Every Drop Matters has worked to pilot solutions to water resource problems throughout the world. Drawing on the respective strengths of UNDP, Coca-Cola, and dozens of local community organizations, the programme has benefitted hundreds of thousands of people. It has development community water management initiatives, promoted the increased use of grey water, empowered young people to become agents of change, and capacitated farmers facing increasing water scarcity.

Every Drop Matter's strengths lie in its ability to work with communities to identify local problems and develop locally driven and owned solutions. Through the simple demonstration of water filters in 35 schools in Kazakhstan, EDM was able to influence local education authorities to install filters in a further 300 schools. Through its four projects within Bangladesh, EDM has been able to secure safe drinking water within schools, emergency cyclone shelters and within communities. In total, projects within Bangladesh have benefitted over 90,000 people, helping them gain access to safe water and sanitation services.

In Jordan, the construction of 27 household grey water treatment systems led to 21,000 m<sup>3</sup> of water being treated and used within home gardens. This has helped families reduce their reliance on piped water and increased the production of crops. The results of this project are now being fed into projects throughout other

countries in the region. Every Drop Matters has also worked to develop educational tools within numerous countries. The programme's award winning Black Sea Box toolkit has been introduced to schools in all six Black Sea coastal states, and is estimated to have reached over 725,000 students. The project also spawned toolkits for Lake Baikal, the Caspian Sea and on global Climate Change. These toolkits are consistently recognised as high quality and much needed materials within schools, and are sought after within countries beyond their original reach.

The reach and impact of the programme goes well beyond what has been achieved within the time scale of its small grant projects. The results highlighted within this booklet document what was achieved directly by the projects, but the overall impacts of the programme lie within the long term, positive, benefits to the communities it has reached.

We hope you will enjoy reading this summary overview of the UNDP – TCCF Every Drop Matters programme!



**Carlos Pagoaga, *Group Director, Global Community Affairs, The Coca-Cola Company***

As there is great interdependency between our world's natural resources, there is great interdependency between the different actors required to make a positive impact on resource challenges. At Coca-Cola, we embrace this belief and recognize that maximizing the impact of our water programs and addressing diverse water issues across our expansive and global system demands purposeful partnerships—partnerships such as ours with United Nations Development Programme (UNDP). UNDP has been a vital partner in our support of Every Drop Matters (EDM), an initiative working to help tackle challenges related to water supply, sanitation, water management and climate change around the world. Through this longstanding partnership between Coca-Cola and UNDP, EDM has undertaken more than 100 projects spanning more than 20 countries.

Projects respond to community needs and include watershed restoration, sustainable agriculture initiatives, capacity-building among government water managers, and more. In Uzbekistan, for example, solar-powered water pumps were tested for four years with local village groups. Each solar panel and pump set is estimated to supply around 5,000 villagers, providing 470 cubic meters of safe drinking water per day. Due to the program's success, the system has been implemented in more than 25 communities, and reached 125,000 additional people in the Navoi and Samarkand regions.

Another strong EDM project example is in the Baunibad slum of Bangladesh, where rainwater-collection systems have been installed on school roofs. These systems rely on gravity, not electric pumps, to take the water to the schools' new drinking-water taps. In addition, small water treatment facilities were supplied to densely populated neighborhoods, reducing the pollution in local ponds. The treatment systems have airtight 'bio-digesters,' which produce biogas that local people can use as fuel. Communities have coordinated bio-digester management committees to keep the new systems maintained.

To date, Every Drop Matters has directly benefited more than 1 million people in Eastern Eu-



rope by improving access to safe drinking water or positively influencing water governance.

Numerous EDM projects like these, implemented over several years, make us proud to have partnered with UNDP and participated in delivering beneficial impact to communities and nature. We're also appreciative to have learned so much from our partnership. We are taking learnings from our work with UNDP to inform projects elsewhere and to further share this knowledge by making best practices available for others.

While the official EDM partnership is coming to a close, our work with UNDP is not complete. We look forward to our ongoing work in China, and expanding our partnership through New World, a program focused on inclusive, sustainable human development initiatives that make meaningful, sustainable improvements in communities and have measurable impact.

We are focused on strengthening communities by removing development barriers and delivering solutions they can easily sustain over time. Our work thus far with UNDP has achieved this goal and also proven when partnerships are effective they can be positively powerful. Through strategic collective action we will all achieve far more than is possible by any one organization or sector working alone.

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# INTRODUCTION

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In adopting the Millennium Development Goals (MDGs), the countries of the world pledged to reduce by half the proportion of people without access to safe drinking water and sanitation, and to stop the unsustainable exploitation of water resources. Recognizing the significant challenges related to achieving these goals, both Coca-Cola and the United Nations Development Programme (UNDP) committed to identifying and supporting solutions to these challenges. The convergence of this mutual commitment provided the basis for the development of Every Drop Matters (EDM) in 2006.

Initially starting out as a regional programme, EDMs demonstrated success led to its expansion into a long term global partnership. Since 2010, this global programme has been a catalyst for protecting and replenishing water resources, helping communities gain much needed access to safe water supplies and sanitation, and improving water use efficiency. Not shying away from piloting novel solutions, its focus has always been to promote sustainable, cost-effective and replicable ways of managing water.

As the MDGs drew to a close in 2015, EDM has now wrapped up its activities. Both the MDGs and EDM are now closed, but there are still great challenges and opportunities to be made within progress to their respective goals. The global community still has a great way to go in addressing the many problems it faces. The Sustainable Development Goals (SDGs), adopted in 2015, are the road map for tackling these problems.

Both UNDP and Coca-Cola recognize the continued power of partnership in tackling development challenges. So, whilst EDM is complete, its mission is not. New World: Inclusive Sustainable Human Development Initiatives, a new partnership programme between UNDP and Coca-Cola is a natural extension of EDM. Within the new sustainable development agenda the programme builds on, and enhances, the focus of EDM.

As EDM closes, the programme is now taking stock of its achievements. Through its global programme, it has reached out to over one million people within Europe and the CIS, the Arab States and Asia. This publication highlights the key achievements made across its many projects conducted during 2010-2016, providing snapshots of some impressive results across 21 countries. You can learn more about the results of projects both online, at [everydropmatters.org](http://everydropmatters.org), and in a partnering overview report. We hope that these publication – as well as the wealth of guidance materials produced by the EDM global programme across its projects – can serve as a source of knowledge and inspiration for all those working to catalyze water security and sustainable development.

In this report, projects are grouped by the country where they were implemented to give a clear overview of the key results and learning made at both the country and project level. As such, we hope this publication – as well as the wealth of guidance materials produced by the EDM global programme across its projects – can serve as a source of knowledge and inspiration for all those working to catalyze water secure and sustainable development.

EDM contributes to Coca-Cola's Water Stewardship and Replenishment goals. Volumes of water reported in this document may count towards replenishment targets, but are subject to validation. Therefore, they are not intended to be interpreted as replenishment values within this report. Details of replenishment achievements, and the quantification methodology can be found at <http://www.coca-colacompany.com/water-stewardship-replenish-report/>.

## BLACK SEA BOX

The Black Sea Box is an award winning and international renowned educational set that engages and teaches children about the Black Sea ecosystem and the living organisms in it. Originally developed within the EDM regional programme, it has been scaled up within the global programme's work. Over the course of the EDM, the Black Sea Box was translated, adapted and rolled out in all six countries in the region: Bulgaria, Romania, Russia, Ukraine, Turkey, and Georgia. In total, at least 3,000 teachers have used the materials to engage more than 220,000 school students in activities to learn about and take action to protect the Black Sea during the global programme's implementation. The project also spawned toolkits for Lake Baikal, the Caspian Sea and on global Climate Change. These toolkits are consistently recognized as high quality and much needed materials within schools, and are sought after within countries beyond their original reach.





## BLACK SEA BOX

### Engaging children to protect their local sea, and think beyond the box

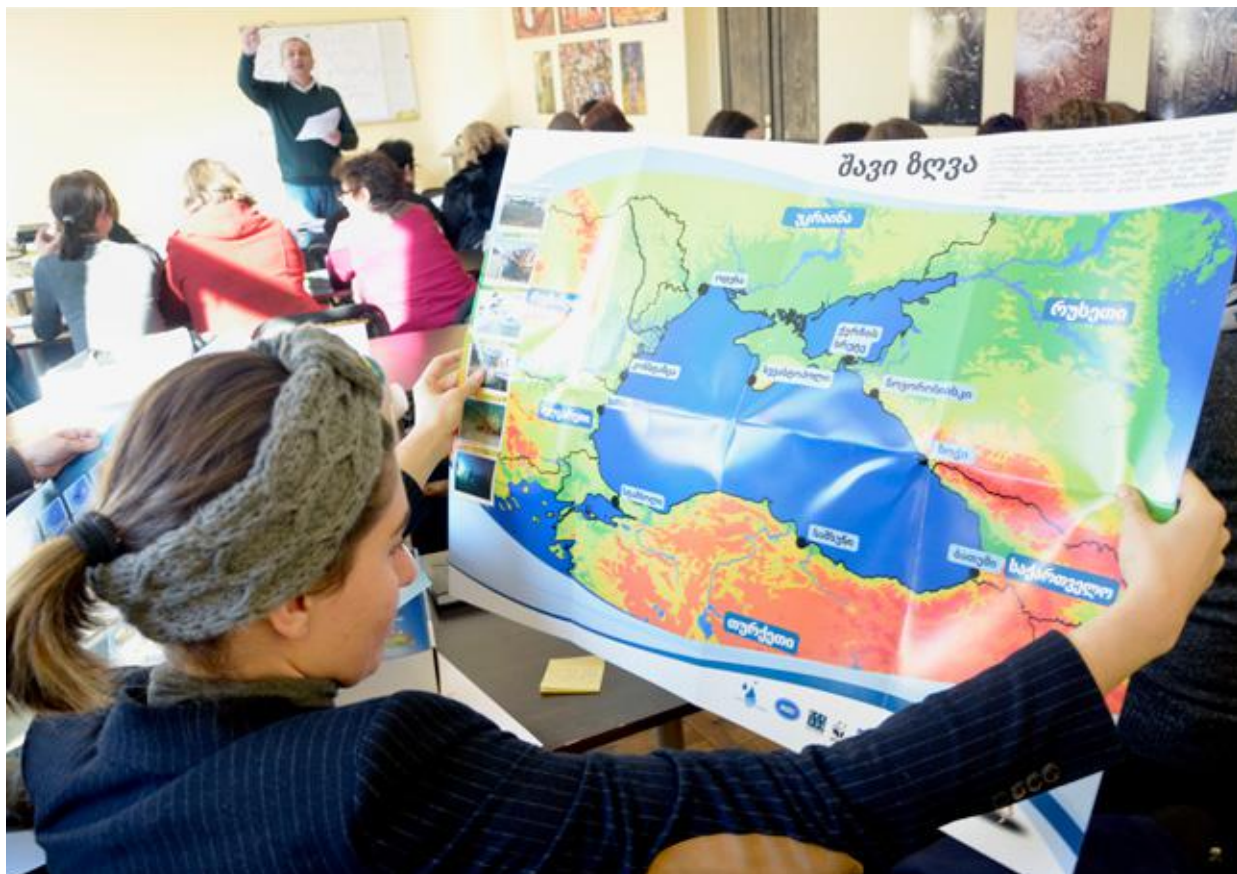
#### Key results: (by country)

#### Bulgaria

- Trained 312 teachers from schools within six regions
- Hosted a 'Black Sea' contest for school children from 27 schools, whose entries were used
- In an exhibition at Bulgarian National Museum of Natural History
- Raised environmental awareness for an estimated 122,400 students
- Received formal support from the Bulgarian Ministry of Education to promote the continued use and development of the Black Sea Box

#### Romania

- Raised environmental awareness of 45,000 students with Black Sea Box lessons
- Distributed 450 printed copies of Black Sea Box to educators throughout Romania
- Trained 210 teachers and educational staff to lesson plan using the Box
- Hosted a national Black Sea Box contest featuring over 3,000 student participants from 26 counties of Romania
- Widely publicized the Black Sea Box via local, regional, and national media outlets, including the popular child T.V. program 'Explorers'
- Received official support from the Romanian Ministry of Education (MoE) to promote and implement the Black Sea Box



## BLACK SEA BOX

### Russia:

- Raised environmental awareness of 2,000 students with Black Sea Box lessons.
- Distributed 754 Black Sea Boxes utilized by teachers at 157 schools
- Held a three-day workshop to train 88 teachers from 30 schools in Sochi, Russia and three from Ukraine on using the Black Sea Box
- Held 25 'training of trainers' seminars for school teachers in Sochi in partnership with the Sochi City Department of Education
- Received visit from United Nations Secretary General Ban Ki-moon and the Mayor of Sochi, Anatoly Pakhomov, who joined Black Sea Box game with students aimed to promote collaboration for ecosystem protection

### Ukraine

- Raised environmental awareness to 100,000 people, including 45,000 students taking Black Sea Box based lessons
- Distributed 4,000 copies of the Black Sea Box to 850 schools and additional educational institutions in five regions
- Trained 2,200 teachers to use the Black Sea Box in lesson planning
- Stimulated schools to arrange more than 50 public events, to raise environmental awareness and clean the Black Sea coast
- Organized two conferences with leading educators and experts in child education to review project results and share experiences between regions



## BLACK SEA BOX

### Georgia

- Raised environmental awareness of 9,000 students, teachers and citizens with Black Sea Box lessons and public events
- Distributed 600 copies of the Black Sea Box to schools
- Received support from National Ministries to promote the Black Sea Box
- Trained 300 teachers from around 200 public schools, eco-clubs and environmental education centers in 10 cities
- Engaged the National Center for Teachers' Professional Development to introduce the Black Sea Box training into its capacity programmes for school teachers
- Produced a talk program on the environmental risks in the Black Sea

**EDM Multi-Generational Project**

**Title:** Black Sea Box (Bulgaria, Georgia, Romania, Russia, Ukraine)

**Implementation period:** 2011-2015

**Implementing agencies:** WWF, UNDP

**Location:** Black Sea Region

# ARMENIA

## At a glance:

- Number of projects: 1
- People gaining improved access to drinking water and sanitation: 947
- People reached by awareness activities: 947

### Implementing partners and contributors

Armenian Women for Health and Healthy Environment • Women for Water Partnership  
Yerevan Djur • A.R.M.E firm producers • Ditak Village • UNDP Armenia



## Key project results

- The EDM project in Armenia rehabilitated sections of a piped water network in Ditak Village in 2014-2015. This has increased access to drinking water for 947 community members, and providing 6,913 m<sup>3</sup> of water.

## Restoring pipes, revitalizing communities

It is a common challenge across rural Armenia: leaky pipes. In Ditak Village, drinking water supply infrastructure is old and has degraded, causing a cascade of challenges. Leaks and low pressure in the system make it vulnerable to contaminants entering the water network, particular during usage peaks which the sink pressure levels even further. While many areas have benefited from national actions to renew water supply networks, many isolated communities like Ditak have not. The EDM project in Armenia rehabilitated the piped water system within Ditak and provided an example that is hoped to inspire local authorities in the region on the value provided by such investments. In combination with the infrastructure development, the project helped the community develop a Water Safety Plan (WSP), and also conducted awareness raising activities to increase the community's understanding of the risks related to unsafe drinking water. A water management committee, led by the Mayor was established to ensure continued improvements in supply delivery. By project completion, more than half of the village's water supply network has been improved, leading to better quality water and 230 families gaining access to clean water in their homes and via community stand-pipes.

### Key results

- Significantly improved local drinking water quality and connected 230 families to safe drinking water
- Helped Ditak Village community develop a Water Safety Plan
- Increased community understanding on risks related to unsafe drinking water
- Replaced and extended over 2,400 m of pipe network connections, more than half of the local drinking water supply network
- Established a water management committee, led by the village mayor
- Delivered educational materials on 'prevention of water-borne diseases' and 'proper management of Community Water Supply Systems'



#### EDM Generation 4 Project

**Title:** Ditak village community for preventing loss of safe drinking water

**Implementation period:** 2014-2015

**Implementing agency:** Armenian Women for Health and Healthy Environment

**Location:** Ditak Village

**Budget:** 77,610 USD (EDM: 60,000 / Co-financing: 17,610)

# BAHRAIN



## At a glance:

- Number of projects: 1

**Implementing partners and contributors**  
UNDP Bahrain

## Key project results

- The EDM project in Bahrain supported the development of a National Water Resources Adaptation Strategy and proposed specific interventions and adaptive management options to water authorities to increase resilience and resource efficiency.



## BAHRAIN

### A strategy for security

Despite its location in a hyper-arid climate, the small island state of Bahrain has one of the highest per capita water consumption rates in the world. With a continually growing demand and high potential for less rainfall under climate change, Bahrain must employ strategies to manage water demand and improve resource efficiency. This project supported the government of Bahrain to develop a National Water Resources Adaptation plan and provide recommendations on a series of priority measures to reduce leakage in municipal water distribution; engage consumers in water-saving and conservation; and improve water productivity within agriculture and industry.

#### Key results

- Supported the development of a National Water Resources Adaptation Strategy in Bahrain
- Conducted a vulnerability assessment of water resources in Bahrain under a range of potential climate change scenarios
- Analysed data, capacity and knowledge gaps in existing water policies and plans to account for possible climate change
- Proposed specific interventions and adaptive management options to water authorities to increase resilience and resource efficiency
- Informed parliamentarians on policy gaps and opportunities that enable the Government of Bahrain to formulate plans and strategies for adaptation to climate change

#### EDM Generation 1 Project

**Title:** Assessment of the impact of climate change on water resources in Bahrain – vulnerability and adaptation

**Implementation period:** 2012-2013

**Implementing agency:** UNDP

**Location:** Bahrain

**Budget:** 70,000 USD (EDM: 70,000)

# BANGLADESH

## At a glance:

- Number of projects: 4
- People gaining improved access to drinking water and sanitation: 97,603
- People gaining improved adaptive capacity to climate change: 40,500
- People reached by awareness activities: 153,247

### Implementing partners and contributors

Concern Universal • Society for Peoples' Action in Change and Equity • Dushtha Shasthya Kendra  
Bangladesh University of Engineering and Technology • Young Power in Social Action  
UNDP Bangladesh • Urban Partnership for Poverty Reduction

## Key project results

- In Tangail and Chandpur, WASH facilities were constructed at 44 schools benefitting approximately 27,500 school students. Rainwater harvesting systems resulted in 6 300 m<sup>3</sup> of water being harvested.
- In the Bauniabad district approximately 10,200 individuals and 4,200 students have increased access to water and sanitation due to the installation of decentralized wastewater treatment systems and rain water harvesting systems respectively. It is estimated that these systems will process approximately 75,160 m<sup>3</sup> of water per year.
- In Chittagong City, the construction of WASH facilities in 12 schools increased access for 9,700 school students, and 24,000 community members who use the schools as shelters during cyclones. The systems tube wells now provide approximately 7,275 m<sup>3</sup> of water to students in the 12 schools.
- In Sirajong municipality, the construction and rehabilitation of WASH systems has improved access for 22,000 school students and.



## WASH in schools – A chance for education

Without running water, working toilets and facilities for hand-washing, sending children to school can be truly dangerous. Surveys in Bangladeshi cities, including Dhaka, found that approximately 70 percent of schools do not have safe water or sanitation and only 15 percent of schools have separate facilities for girls. Teasing, fear, and general discomfort prevents many girls from going to school and receiving education. This project transformed schools by installing running water, new wells, toilets and waste disposal units and establishing WASH communities to maintain facilities and provide education on proper hygiene. At the Akkas Ali Railway Colony Academy in Chandpur, for example, the school attendance rate increased from 70% to 98% and students enjoy a healthier, happier and more productive learning environment. At the time of the project's completion in 2013, project partners Society for Peoples' Action in Change and Equity (SPACE) and Concern Universal (CU) had improved WASH facilities in 20 schools in Chandpur Municipality, but nearly 50 more in the area remained unsanitary and unsafe, especially for girls. The potential for scaling this type of project through this municipality – and the country – is clear and imperative.

### Key results

- Supported the development of a National Water Resources Adaptation Strategy in Bahrain
- Conducted a vulnerability assessment of water resources in Bahrain under a range potential climate change scenarios
- Analysed data, capacity and knowledge gaps in existing water policies and plans to account for possible climate change
- Proposed specific interventions and adaptive management options to water authorities to increase resilience and resource efficiency
- Informed parliamentarians on policy gaps and opportunities that enable the Government of Bahrain to formulate plans and strategies for adaptation to climate change



#### EDM Generation 1 Project

**Title:** School-led WASH initiatives for the urban slums in Tangail and Chandpur

**Implementation Period:** 2011-2013

**Implementing agency:** Concern Universal Bangladesh

**Location:** Chandpur and Tangali, Bangladesh

**Budget:** 259,660 USD (EDM: 120,000 USD / Co-financing: 139,660 USD)

## BANGLADESH

### Smarter sewage and storage systems in slums

Dhaka faces enormous water challenges: the water table is sinking; many drinking water sources are polluted; slums are not connected to legal piped water networks and a majority of households do not have sufficient water to meet their needs. In the Bauniabad community, constructed rainwater harvesting systems were built and recovered in schools, and five decentralized waste water treatment systems installed in the community. This reduced pollution reaching public water bodies, enabled the generation of locally produced bio-energy. It also provided an additional 75,000 m<sup>3</sup> of water per year and lowered the transmission of water-borne diseases by collecting and keep stored rainwater clean. By building capacity in school management committees to operate the systems and the creation of maintenance funds, the project expects a sustained and growing contribution to improved water, sanitation and hygiene in Bauniabad community in Dhaka.

#### Key results

- Installed decentralized wastewater treatment and rain water harvesting systems
- Improved access to water and sanitation for 10,200 residents and 4,200 students
- Reduced polluted waste water reaching water bodies and increased biogas generation
- Capacitated school management committees to operate and maintain the systems
- Created maintenance funds to ensure that future costs will be covered
- Educated over 5,000 people
- Processes more than 75,000 m<sup>3</sup> of water per year



#### EDM Generation 2 Project

**Title:** Combining rain water harvesting and waste water reuse for water supply in urban slums of Dhaka

**Implementation period:** 2012-2013

**Implementing agency:** Dushtha Shasthya Kendra

**Location:** Bauniabad Slum, Dhaka

**Budget:** 215,084 USD

(EDM: 119,946 /Co-financing: 95,138)

## Building safer shelters and schools

Chittagong city, like many densely populated coastal urban areas in Bangladesh, is frequently hit by cyclones and devastating flooding that follow them. While the city has more than 2 000 cyclone shelters to provide a place for immediate protection from storms, a majority of them have very poor water and sanitation facilities. This results in the spread of disease among those seeking refuge after the storm. These shelters also double as local schools for many communities, where the lack of safe water and sanitation facilities poses an everyday threat to child health. The EDM project worked to rehabilitate existing, and build new, water and sanitation facilities within 12 cyclone shelters. As a result, nearly 10 000 school children and 24 000 community members have received improved access to safe water and sanitation. Five of these centers were established to act as demonstration centers, to provide a model and guidance on how to replicate similar renovations across the city and country. Through the creation and capacitation of school management committees at each project site, these facilities should be maintained to ensure a sustained impact and inspire action for other communities.

### Key results

- Installed 23 new, and repaired 49 dilapidated latrines, deep tube wells and hand washing facilities in twelve schools
- All students at the schools now have access to clean water, and have improved sanitation and hygiene
- Improved access to safe water and sanitation to an estimate 9,700 students and 24,000 community people
- Upgraded rain water harvesting systems in six schools – which now collect 84 m<sup>3</sup> of water per year
- 12 School management committees (SMC) were established and trained to manage the systems over 6 workshops
- Through the SMC, 12 independently developed maintenance funds were created to maintain WASH facilities
- Engaged 4,458 students and 3,683 community members were involved in hygiene education activities

#### EDM Generation 3 Project

**Title:** Climate change adaptation by ensuring water and sanitation facilities in cyclone shelter

**Implementation period:** 2013-2014

**Implementing agency:** Young Power in Social Action

**Location:** Chittagong City

**Budget:** 11,172 USD (EDM: 93,934 / Co-financing: 7,238)

## BANGLADESH

### School led WASH in Sarjgong

In Sirajgonj municipality, home to more than 300,000 people, nine out of ten residents do not have access to safe sanitation. While many schools have toilets facilities, nearly half are not functional and most lack proper handwashing facilities. Many schools also have functional water points but do not supply enough drinking water for the thousands of students using them. This poses serious threats to children's health and fundamental challenges to establishing a healthy educational environment. The EDM project worked to improve water and sanitation facilities in 50 schools within the Sirajgonj municipality and improve awareness on healthy hygiene among school students and local communities. In collaboration with school management committees, tube wells, water access points and rainwater harvesting systems were designed and constructed at schools. Local construction workers were employed and trained to build the systems so that they could build similar units elsewhere. Training sessions and awareness raising activities were held on hand washing and safe toilet use both in the schools and the surrounding communities.

#### Key results

- Improved access to safe water, sanitation and hygiene at 50 schools and 22,000 school students in the Sirajgonj municipality
- Designed and constructed tube wells, water access points and rainwater harvesting systems
- Employed and trained 50 construction workers to build water and sanitation systems required, to ensure local capacity for replication
- Constructed rainwater harvesting and groundwater recharge systems at 15 schools
- Provided training sessions for students and 100 teachers on hand washing and safe toilet use
- Education and awareness on menstrual hygiene provided for girls and women in surrounding communities



#### EDM Generation 4 Project

**Title:** School led WASH for urban poor in Sirajgonj Municipality

**Implementation period:** 2014-2015

**Implementing agency:** Concern Universal Bangladesh

**Location:** Sirajgonj municipality

**Budget:** 119,603 USD

(EDM: 99,603 / Co-financing: 20,000)





# BELARUS

## At a glance:

- Number of projects: 4
- People gaining improved access to drinking water and sanitation: 5,200
- People reached by awareness activities : 35,676

### Implementing partners and contributors

UNDP Belarus • Coca-Cola Belarus • Global Environment Facility • Inter Church Mission Social Service  
Ministry of Environment, Belarus • Burenco-plus, Ecological Initiative • Glybokaje Executive Committee



## Key project results

- Four spring sites have been restored, supplying over 50,000 m<sup>3</sup> of water and benefiting 7,000 local residents.
- Engineering activities in the Yelnya region have improved the hydrological regime of the raised peat bog. Working over a 7,200 hectare area, the project has increase water storage within the bog by 50,000,000 m<sup>3</sup>.
- A new water exhibition has been created at the National Museum of Nature and Ecology, and will reach approximately 15,000 visitors per year.
- Water access points have been developed at the sites of natural springs and will benefit 4,500 community members

## Living water

In Belarus, springs not only provide important sources of clean drinking water but are also considered sacred sites for religious rituals. Though spiritually revered, springs are often poorly protected and maintained resulting in polluted, unusable water. This project rehabilitated four springs in the Vitebsk, Bobruisk and Osipovichy districts, providing access to clean water for 700 villagers and built capacity in local groups to maintain and protect the springs for future use. To guide action taken at the national and regional level to improve public access and protect the local environment, an inventory of priority springs for protection and restoration – based upon the environmental status, tourism development potential and level of engagement of local stakeholders – was produced for UNDP and policy makers.

### Key results

- Produced an inventory of priority springs for protection and restoration in Belarus, which can guide strategic interventions for improving drinking water supply and tourism development.
- Raised awareness and capacity in local populationsto protect and maintain of springs as clean and accessible drinking water sources and recreational areas
- Rehabilitated four springs in Belarus, providing access to clean drinking water to 700 people
- Established new volunteer groups to ensure the monitoring and maintenance of springs in the future



#### EDM Generation 1 Project

**Title:** Living water: clean springs in Belarus

**Implementation period:** 2011-2012

**Implementing agency:** UNDP Belarus, Inter-church Mission Christian Social Service Location: Vitebsk, Bobruisk and Osipovichy districts

**Budget:** 69,215 USD (EDM: 43,200 / Co-financing: 26,015)

## BELARUS

### Saving and sustaining Glybokaje springs

The springs of Belarus serve as a vital source of clean water for local people with great cultural, spiritual and historical importance to numerous communities throughout the country. Despite some communities efforts to protect springs and make them more accessible, local ecosystems and water quality are often inadequately protected. The EDM project assessed the ecosystem, water quality and infrastructure conditions of 17 springs within the Glybokaje region and identified those springs that are most in need of protection, both for their environmental value, and their value to communities within their vicinity. It then engaged and educated diverse stakeholders to improve knowledge of springs, and their value, for communities. Local actors, inspired by the results of this EDM project began work to establish local landmarks, new water protection zones and designated re-charge areas of the springs.

#### Key results

- Built water access points for a community of 4,500 residents
- Conducted an inventory of springs in the Glybokaje district and examined the environment, ecosystem, water quality and infrastructure at each site
- Identified priority protection areas and springs best fit for use as drinking water sources.
- Established local landmarks to indirectly benefit the population of Glybokaje district (approximately 40,000) as well as visitors and tourists to the area.
- Raised awareness of 176 persons on spring development, protection and use, including government authorities, members of industry and local stakeholders



#### EDM Generation 2 Project

**Title:** Protection and sustainable use of springs of Glybokaje District

**Implementation period:** 2013-2014

**Implementing agency:** Burencoplus, Ecological Initiative

**Location:** Glybokaje District, Vitebsk Region

**Budget:** 31,500 USD (EDM 30,500 / Co-financing: 1,000)



## Valuing nature, restoring value

Belarus is rich in Peat bogs, which cover 12% of its national territory. Though they are one of the most valuable natural ecosystems in the world, they are also one of the most threatened. The Yelnya Reserve – one of the largest near-natural raised bogs in Europe – is truly a treasure. The annual economic value of its ecosystem services, such as water purification, storage and flood protection, is estimated to be 35 million USD per year. Preservation and maintenance of the bog ecosystem is critical, as it is vulnerable to human activities, disruptions to the hydrological regime and fires. This multi-generational EDM project, supported the sustainable management of the bogs water resources and climate change adaptation in the Yelnya Reserve. During the first phase it produced research to increased knowledge of the ecosystem, as well as build awareness and capacity for managing this uniquely valuable natural system. This included an exhibition at the National Museum of Nature and Ecology of Belarus on water resources and natural systems in Belarus, that attracts an estimated 15,000 visitors each year. In its second phase it worked to directly improve the health and hydrological functions of the ecosystem, and has conserved an initial estimate of 50,000,000 m<sup>3</sup> of water in the region.

### Key results (phase 1 and 2)

- Performed an assessment of the annual value of Yelnya ecosystem services, resulting in an estimate of 35 million USD per year
- Identified twelve protected habitats and areas of severe degradation to plant communities for priority action
- Provided valuable tools for demonstrating the value of ecosystem rehabilitation activities, which can be replicated for assessment and project planning throughout Belarus
- Constructed 48 earth dams and a spillway dam, increasing water retention capacity, wetted area, and resilience to fires in the ecosystem
- Installed an exhibition at National Museum of Nature and Ecology of Belarus on water resources and natural systems in Belarus, that attracts an estimated 15,000 visitors each year
- Created and distributed educational materials for use by ministries, academia, NGOs, local decision makers, schools and libraries

#### EDM Multi-Generational Project (3-4)

**Title:** Supporting implementation of the Management Plan of the National Landscape Reserve 'Yelnya'

**Implementation period:** 2015-2016

**Implementing agency:** UNDP Belarus

**Location:** Yelnya region

**Budget:** 186,836 USD

(EDM 160,000 / Co-financing: 26,836)

# IRAQ



## At a glance:

- Number of projects: 1
- People gaining improved access to drinking water and sanitation: 143

### Implementing partners and contributors

Kurdistan Reconstruction and Development Organization • Basak Village Community • UNDP Iraq

## Key project results

- An EDM project in north-east Iraq provided 143 villagers improved access to drinking water through the installation of a 1.3 km water pipe network. This increased the average per capita piped water access in the village from 7 to 167 liters per day.

## Revitalizing village life with clean water

Basak is a small village located in a mountainous region in of Sharbazher District, north-eastern Iraq, with an estimated population of 143 villagers across 26 households. The people of Basak are impoverished, and had a particularly dire water situation, living off just 7 litres per capita per day. The water supply system was leaky, poorly maintained and very inefficient. In the village, there was only one public tap, originally intended to serve five to seven houses, which could not meet the villagers' needs. Women had to fetch water from distant and often polluted rivers, ponds, and streams on a daily basis, carrying water-borne diseases back with them. The EDM project provided a new water supply system in Basak village, and increased per capita water access to 167 liters per day. A key success of the project was the demonstration that it could be implemented in a remote mountainous location. This gives a clear example for future actions to improve water supply and local livelihoods in similar villages across Iraq. With strong community leadership and modest seed funding, people can improve their living conditions dramatically in communities that may be remote but not should not be out of reach.

### Key results

- Provided a new water supply system in Basak village, serving a community of 143 people
- Increased per capita water access from 7 to 167 liters per day
- Reduced incidence of water-borne diseases and improved attendance in schools
- Established a village water committee to manage the water network
- Initiated new networks for sharing knowledge on water management between villages
- Provided training in plumbing for women in leak detection and maintenance



#### EDM Generation 1 Project

**Title:** Water management at the community level in Basak village

**Implementation period:** 2012-2013

**Implementing agency:** Kurdistan Reconstruction & Development Organization (KURDO)

**Location:** Basak Village, Iraq

**Budget:** 86,177 USD (EDM: 74,975 / Co-financing: 13,752)

# JORDAN

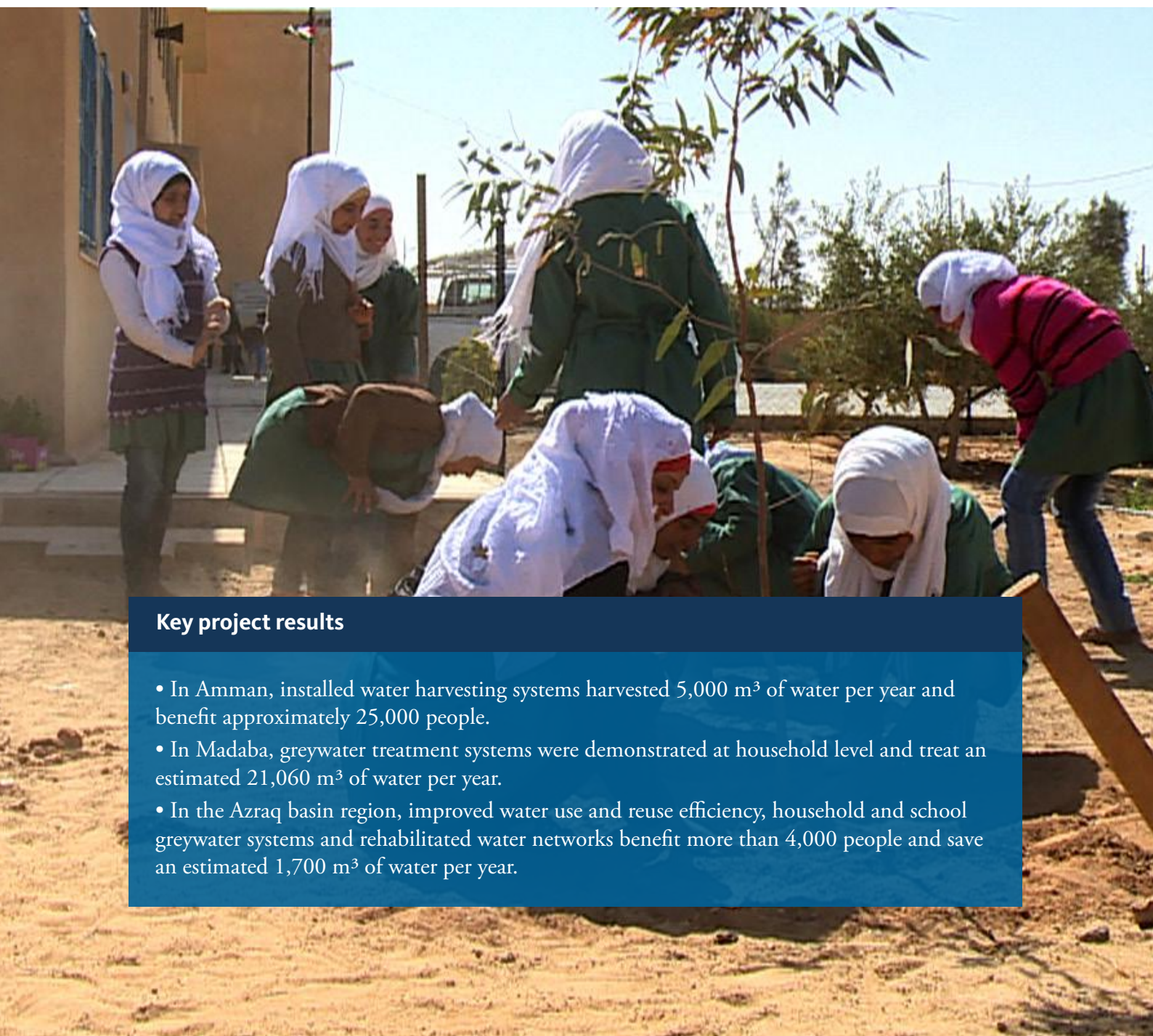


## At a glance:

- Number of projects: 3
- People gaining improved access to drinking water and sanitation: 1,255
- People gaining improved adaptive capacity to climate change: 3,160
- People reached by awareness activities: 26,863

### Implementing partners and contributors

Land and Human to Advocate Progress • International Center of Agricultural Research in the Dry Areas  
Royal society for conservation of nature • UNDP Jordan



## Key project results

- In Amman, installed water harvesting systems harvested 5,000 m<sup>3</sup> of water per year and benefit approximately 25,000 people.
- In Madaba, greywater treatment systems were demonstrated at household level and treat an estimated 21,060 m<sup>3</sup> of water per year.
- In the Azraq basin region, improved water use and reuse efficiency, household and school greywater systems and rehabilitated water networks benefit more than 4,000 people and save an estimated 1,700 m<sup>3</sup> of water per year.

## Saving from the rainy days

As one of the driest countries on earth, the value of a clean supply of sufficient water is evident in Jordan. Yet, poor storage and inadequate treatment of wastewater means highly coveted resources too often go to waste or are applied unsafely. This project installed three different water collection and storage systems and built capacity among local residents to maintain and operate them. Sites ranged from schools to mosques to rehabilitated natural systems such as ponds and lakes. In total, more than 5,000 m<sup>3</sup> of water are saved annually and communities have become more engaged in the conservation of their natural resources.

### Key results

- Constructed three separate water and storage infrastructure in public buildings and natural systems
- Assessed 196 traditional water harvestings systems ponds and dams, identifying the range of available solutions applied in Jordan's history
- Rehabilitated two historical water harvesting sites
- Raised public awareness on value of traditional rainwater harvesting through an active national campaign
- Provided a model for replication at schools, places of worship and traditional water harvesting sites



#### EDM Generation 1 Project

**Title:** Traditional water harvesting improves community resilience in climate change adaptation

**Implementation period:** 2011-2013

**Implementing agency:** Land and Humans to Advocate Progress

**Location:** Amman, Jordan

**Budget:** 120,000 USD

(EDM: 100,000 / Co-financing: 20,000)

## JORDAN

### Making grey the new green in Jordan

As one of the most water scarce countries of the world, safe re-use of greywater is essential to sustain agricultural production amidst growing demand from households and urban development. The EDM project constructed 27 greywater treatment units and provided insights to improve the quality and effective application of the treated effluent. This included a monitoring programme on the use of various filtration media in greywater systems, system flow rates, and contaminant loading. Following training provided to more than 100 community members to operate and maintain the systems and correctly use greywater in agriculture, olive crop and oil production nearly doubled while water bills were cut by up to 35 percent. Based upon the success in Madaba, a nation-wide Greywater Users Society was established in Jordan, spreading the lessons learned in the project to advocate and support improved water reuse across the country.

#### Key results

- Constructed 27 greywater treatment units to process
- More than 400 m<sup>3</sup> of greywater treated reused in agriculture each week
- Demonstrated value of greywater in agriculture to reduce water bills by up to 35%
- Trained 125 community members to correctly treat and use greywater
- Increased olive crop and oil production in targeted communities by 94% and 100%
- Tested and applied new research on greywater monitoring systems



#### EDM Generation 2 Project

**Title:** Community-based interventions for productive use of grey water in home farming

**Implementation period:** 2013-2014

**Implementing agency:** International Center for Agricultural Research in the Dry Areas

**Location:** Madaba, Jordan

**Budget:** 125,000 USD (EDM: 75,000 / Co-financing: 50,000)

## Renewing water, revitalizing home farming in Jordan

The Azraq nature reserve, located in the heart of the East Jordan Desert, was once home to a rich and diverse ecosystem. Despite efforts to redevelop the nature reserve, continued over abstraction of water resources make it challenging to restore the wetland ecosystem. The EDM project worked to improve water efficiency, reduce losses in water supply systems and lower water demand within the basin. This included the installation of water saving devices and household greywater units, and rehabilitating local water networks to reduce losses and contamination risks in the water supply. This provided families improved access to water and led to reduced water consumption in households. Local citizens, including youth, were engaged through a series of awareness raising activities and an educational programme tailored for use at the Azraq nature reserve. Forty young ‘Nature Knights’ will were trained to continue providing environmental education to their peers. The project also demonstrated water saving and grey water reuse solutions, which have great potential for further uptake throughout the Arab region.

### Key results

- Improved water use and reuse efficiency to benefit more than 4,000 people and save an estimated 1,700 m<sup>3</sup> per year
- Rehabilitated a water network to reduce leakage losses and the risk of contaminants to 12 houses
- Installed greywater systems at 10 locations, including four schools, four households and two public buildings
- Delivered training community members and school students on water conservation
- Developed a tailored educational programme for children on Azraq nature reserve
- Engaged 1,700 people in diverse awareness raising activities
- Trained 40 young ‘Nature Knights’ to educate their peers on environmental protection

#### EDM Generation 3 project

**Title:** Enhancing resilience of Azraq basin community

**Implementation period:** 2013-2014

**Implementing agency:** Royal Society for Conservation of Nature

**Location:** Azraq basin, Jordan

**Budget:** 105,938 USD (EDM: 99,938 / Co-financing: 6,000)

# KAZAKHSTAN

## At a glance:

- Number of projects: 7
- People gaining improved access to drinking water and sanitation: 15,617
- People gaining improved adaptive capacity to climate change: 383
- People reached by awareness activities: 28,150

### Implementing partners and contributors

UNDP Kazakhstan • Regional Environmental Centre for Central Asia • Farmers of Kazakhstan • Akbota • Aral Aeldere Central Asian Regional Environmental Centre for Central Asia • Margulan Village Cooperative • Kazakh National University Agricultural Union of Kazakhstan • Arshaly education office • Arshaly sanitary • LLP – Kaisar • Municipalities Farm – Gutyar • Kanbala Balky Ltd • Zhambul branch of KadVodKhoz

## Key project results

- In the Arshaly region, the introduction of drip irrigation technologies to 105 plots of land has saved up to 20,000 m<sup>3</sup> of drinking water, improved crop yields, and benefited 1,200 individuals.
- In the Enbekshikazakhsky, Iliysky and Almatynskaya regions, approximately 1,600 people will benefit from the reduction of agricultural contaminants entering rivers. The development of water distribution systems resulted in an estimated saving of 3,000,000 m<sup>3</sup> of water per year.
- A new awareness raising toolkit, educating children in the Caspian Sea regions of Kazakhstan was distributed to schools and was used by approximately 5,000 students in its first year.
- In the Batken region, 7,500 children and school staff have gained access to clean water in 35 schools through the installation of water filters. As a result of the project's demonstrated success, the local authorities have agreed to fund and install filters at approximately 300 more schools.
- In Merke district, Zhambul oblast, improvements in the agricultural water distribution network has reduced distribution losses by 1,484,700 m<sup>3</sup>.
- In the Akmola, Almaty and Kyzylorda regions, the installation of water filters and automatic tap sensors has benefitted 3,517 children and saved 5,770 m<sup>3</sup> of water.



## Saving drinking water together

Within the Arshaly region, Kazakhstan, the use of reservoir water for irrigation has been banned. This resulted in many home gardens becoming abandoned for use in domestic produce production. Further, the local agricultural community is becoming increasingly concerned about the effects of climate change on crop production. Recognising a clear need and opportunity to capacitate the local community on water efficiency within agriculture, the EDM project worked to demonstrate the use of water efficient irrigation systems. Working with the local community, the project installed drip irrigation technology across 105 small scale plots. It then worked with the local community to generate awareness regarding the installed technology. This awareness included involvement of school children, news media, local governors, and UNDP offices from other countries. The project was able to demonstrate the use of simple drip irrigation systems within households, helping increase crop yields while also reducing demands on water resources.

### Key results

- Benefitted 1,200 people through the demonstration of drip irrigation technology
- Established 105 drip irrigation plots and 5 demonstration sites for other communities to visit
- Helped reduce local water consumption within household agriculture by 20,000 m<sup>3</sup>
- Communicated the project results through mass media
- Reached out to 7,500 people through a series of workshops, meetings and roundtable events



#### EDM Generation 1 project

**Title:** Saving drinking water together

**Implementation period:** 2011-2012

**Implementing agency:** UNDP Kazakhstan

**Location:** Arshaly region, Akmola oblast

**Budget:** 233,490 USD

(EDM: 100,000 / Co-financing: 133,490)

## KAZAKHSTAN

### Every drop for human health

Kazakhstan has made significant progress to provide access to clean drinking water but still faces challenges: one in ten households do not have running water, and a quarter of the population has no access to basic sanitation facilities. This project installed water filters in 35 schools, restored the quality of local drinking water sources, and provided training to manage water supply and treatment systems as well as to report water quality problems to the authorities. Through spirited campaigns and active community involvement, local authorities were inspired to invest and install new water filters in an additional 300 schools to remove dangerous substances in the drinking water used by thousands of students, teachers and school staff across the country.

#### Key results

- Installed water filters in 35 schools, improving drinking water quality to 7,000 students and 500 school staff
- Remediated five springs that serve as drinking water sources
- Solicited action from local authorities to install water filters in a further 300 schools
- Trained over 100 volunteers (including 70 women) and local authorities to survey, document and report water quality problems to motivate action to improve water supply
- Trained 100 school staff and medical professionals to manage and maintain water supply and treatment systems
- Supported a local dentist surgery with equipment that provides free dental checkups for local students: 5,200 school students have received free dental checkups



**EDM Generation 2 Project**  
**Title:** Every Drop for Human Health

**Implementation period:** 2012-2013  
**Implementing agency:** Akbota NGO  
**Location:** Batken Region  
**Budget:** 68,000 USD (EDM: 40,000 / Co-financing: 28,000)

## A Greener, Cleaner Caspian Sea

The Caspian Sea is enormous in size, beauty and value as a thriving ecosystem, trading hub of Western Asia and tourist destination. EDM worked to support the region as it looks to chart a path for green development and reverse the degradation of coastal and marine ecosystems that threaten its future. This project created the Caspian Green Sea Pack to inform, engage and enable the next generation of environmental stewards to understand the key issues effecting the region and take action. The Pack is a teacher's resource to educate 11 – 15 year olds from Caspian Sea coastal communities within Kazakhstan on environmental protection and sustainable development. The educational materials, officially endorsed and disseminated by the Ministry of Education in Kazakhstan, include games that build understanding of ecosystem values, interactive computer software and teachers' manuals. Within its first year alone, the Pack was used by hundreds of educators and thousands of students across Kazakhstan and featured in diverse news media and publications. The project built upon successful applications in other countries in the Caspian Sea Region with focused pilots in schools in Kazakhstan. By ensuring active participation in the development of the Caspian Green Pack from the pilot schools, the project not only developed a model for scaling up the current Pack – but it also created a fertile testing group for piloting further additions and innovations in the format. Several of the same schools are already taking part as leading role in the new pilots selected in a UNDP GEF-SGP programme to expand the Pack to include guidance on energy efficient lighting.

### Key results

- Five hundred copies of the Caspian Sea Green Pack produced and in use
- Officially endorsed and adopted into school curriculum by the Ministry of Education of Kazakhstan
- Trained more than 100 educators and engaged an estimated 5,000 students in its first year
- Raised awareness on environmental protection of the Caspian Sea through an intensive public campaign
- Completed a successful pilot with high possibility for replication in neighboring countries in the Caspian Sea Region



#### EDM Generation 3 project

**Title:** Caspian Green Pack as an instrument of public awareness and environmental education on water and water-related issues in the Caspian Sea region of Kazakhstan

**Implementation period:** 2012-2013

**Implementing agency:** CAREC

**Location:** Atyrau, Mangistau and Uralsk regions, Kazakhstan

**Budget:** 235,000 USD

(EDM: 80,000 / Co-financing: 155,000)

## KAZAKHSTAN

### Wiser course of action: Improving water distribution, efficiency and protection

The Enbekshikazakhsky, Iliysky and Almatynskaya regions of Kazakhstan each face several concrete challenges in the management and protection of its water resources. First, the grazing of livestock on the banks of rivers near the villages results in a serious risk of contaminants entering the water. Second, water flows into the river system are highly variant, a problem that is exacerbated by inadequate regulation and distribution systems of water. This can result in both inefficient irrigation in times and places where water is abundant and shortages in neighboring areas. This project made two main and highly effective interventions to install water distributors and manure storage facilities, paired with capacity building for hundreds of farmers on manure recovery and efficient water use. This resulted in an estimated annual water savings of 3 million m<sup>3</sup>, improved water and soil quality and new potentials for bio-energy generation in the region. The project has also demonstrated a winning formula for replication. The planning of four new water distributors were with alternative funding was underway before the implementation period of the project ended. There are clear opportunities for other communities, within the Commonwealth of Independent States to replicate the project, as they are also experiencing similar problems.

#### Key results

- Twelve manure storage locations have been created, leading to less pollution, improved agricultural productivity and new opportunities for biogas generation.
- Ten new water distributors were constructed, enabling a more effective use and equitable distribution of water resources and an estimated 3 million m<sup>3</sup> of water saved annually
- Improved capacity in water and manure management for more than 300 farmers
- Reduced risk of water contamination and spread of disease from animal waste
- Improved access to WASH for 1,600 people
- New business opportunities for biogas generation and water distributor installation

#### EDM Generation 2 Project

**Title:** Protecting water and land resources from contamination by using water management and composting

**Implementing agency:** Farmer of Kazakhstan

**Location:** Enbekshikazakhsky and Iliysky region, Almatynskaya region

**Implementation period:** 2012-2014

**Budget:** 153,550 USD (EDM: 153,550)

## Smarter water systems sustain communities

The water supply in the districts of Kazalinsk and Aral in the Kyzylorda region of Kazakhstan is limited. Seventy percent of inhabitants do not have adequate access to drinking water, and in many villages water is only supplied for a two-hour period every day. The lack of basic access to water makes small scale agriculture in the region a serious challenge and unprofitable. The EDM project worked in the Kyzylorda region improve water resource use efficiency by piloting of modern agricultural techniques, diversifying crop cultivation, and installing drip irrigation systems. In total, more than 2,000 people were engaged in project activities, including 300 people directly benefiting from the demonstration of drip irrigation technologies, leading to an estimated saving of more than 14,000 m<sup>3</sup> per year compared to traditional irrigation techniques. The use of modern techniques should increase the productivity of cultivated land, and help small farmers earn more to sustain local livelihoods.

### Key results

- Installed 10 hectares of drip irrigation systems, including at four schools and four mosques
- Installed 300 small scaled plots for drip irrigation used by households to grow fruits and vegetables
- Capacitated more than 2,000 people in the use of drip irrigation systems and sustainable water management
- Produced an estimated savings of more than 14,000 m<sup>3</sup> of water
- Performed extensive awareness raising and community outreach, training expert volunteers to support rural communities to use drip irrigation and other modern agricultural practices
- Produced a film to showcase project achievements and inspire improved agricultural water management in the region



**EDM Generation 3 project**  
**Title:** Aral – Every drop for us

**Implementing agency:** Aral Aeldere  
**Location:** Kyzylorda region  
**Implementation period:** 2013-2014  
**Budget:** 208,250 USD  
 (EDM: 100,000 / Co-financing: 108,250)

## KAZAKHSTAN

### Measured water, stronger farms

In the Merke district, within the Zhambyl oblast of Kazakhstan, a majority of the 76,000 inhabitants depend on agriculture for their livelihoods. Irrigation systems within the Merke district are fed by two irrigation canals that are poorly maintained and have distribution losses estimated to be as high as 50-80 %. The pressure on farmers caused by distribution losses and also the lack of water measuring systems, has resulted in farmers accusing each other of unequal use of the resource. They also often grow climate resistant but less profitable crops or leave land fallow. To reduce conflicts between farmers and allow for the accurate distribution of water between farms, the EDM project constructed water metering and distribution points, or “hydroposts”. These posts measure discharges at each installation location, allowing for the accurate monitoring of water flows to each farm. The information is automatically logged, and then used to correctly time irrigation of crops. It also ensures the correct charging of farmers for their water use. The greater accuracy in timing and volumes for specific crops has led to large water savings, potentially reaching 1,480,000 m<sup>3</sup> of water based upon initial estimates. However, it represents a significant reduction in water loss. Coupled with future canal rehabilitation work, the project shows great potential to save water and reduce conflict between members of the local farming community. This will also lead to a reduction in worker migration, and improve the health of the local economy.

#### Key results

- Enhanced water resource management, reduced water losses from the Majlybaj canal, and mitigated social tension among members of the local agricultural community
- Constructed 15 hydroposts - water metering and distribution points that automatically and accurately monitor water flows to farms and enable optimizing timing of timing of crop irrigation
- Improved accuracy in timing and volume of water used for irrigation of crops results in significant water savings – potentially reaching an estimated 1,480,000 m<sup>3</sup>
- Produced accurate water allocation records to enable correct charging for water use and optimized distribution
- Built capacity in local authorities on maintenance and use of water measuring systems, including required software applications
- Built capacity in farming communities on efficient irrigation techniques
- Supported and trained local residents in proposal writing to seek financing for irrigation system development, resulting in at least successful application

#### EDM Generation 4 Project

**Title:** Improvement of water resources management in Zhambul oblast of Kazakhstan through the introduction of effective water use system

**Implementing agency:** Central Asian Regional Environmental Centre for Central Asia

**Location:** Zhambul oblast

**Implementation period:** 2014-2015

**Budget:** 208,250 USD (EDM:79,439 / Co-financing: 5,456)



## KAZAKHSTAN

### Water saving is child's play

Focusing on orphanages and schools as a demonstration platform, EDM piloted viable water saving practices and water quality management, and engaged school children and educators to become champions for water stewardship. Water meters, filters and sensors were installed in six orphanages within the regions of Akmola, Almaty and Kyzylorda to improve drinking water quality and increase use efficiency at the schools. Outside the schools, poly-tunnels with modern drip irrigation systems were built to provide fruit and vegetables to orphanage residents and school children. The project also conducted several training activities for staff from each of the six project locations on a wide-set of topics such as water efficiency, agriculture, and social mobilization, empowering them to advocate water solutions and educate their peers. The project has produced a model that is quickly spreading throughout the region. Based upon its demonstrations, Kyzylorda Education Department will finance the installation of water filters in all of the schools that it oversees and, additionally, a number of activities piloted have already been replicated in two schools outside of the project locations. Looking ahead, there are considerable opportunities for further scaling up at the regional level in the near future.

#### Key results

- Installed 71 water sensors, leading to a water saving of approximately 1,830 m<sup>3</sup>
- Installed 15 water filters with capacity to clean 3,940 m<sup>3</sup> of water per year
- Improved drinking water quality for approximately 3,500 students and 240 additional households
- Organized a student competition for water saving solutions, with sixty-five participants and seven proposed ideas implemented
- Trained and engaged over 300 educators in water saving and sustainability, who applied learning in activities with 1,900 students
- Engaged and inspired Kyzylorda Education Department to finance the installation of water filters in all of the schools that it oversees

**EDM Generation 3 project**

**Title:** Aral – Every drop for us

**Implementing agency:** Aral Aeldere

**Location:** Kyzylorda region

**Implementation period:** 2013-2014

**Budget:** 208,250 USD

(EDM: 100,000 / Co-financing: 108,250)

# KYRGYZSTAN



## At a glance:

- Number of projects: 1
- People gaining improved adaptive capacity to climate change: 299

### Implementing partners and contributors

UNDP Kyrgyzstan • Dary Water User Association • Karabak Water User Association  
Dary Governate • Karabak Governate



## Key project results

- There was one EDM project in Kyrgyzstan that demonstrated two efficient irrigation sites and provided training to nearly 200 people on water accounting, asset management, efficient water-use technology and climate adaptation planning. The installed irrigation systems save approximately 7,900 m<sup>3</sup> of water per year compared to traditional ones.





## KYRGYZSTAN

### Building capacity for a changing climate

In Kyrgyzstan, projected impacts of climate change are likely to make existing water scarcity challenges more severe. With generally poor irrigation infrastructure and weak local development planning there are real dangers of lowered agricultural and economic production. To respond to the challenge, improved cooperation, coordination and capacity in efficient water management is needed for farmers and local Water Users Associations (WUA). Through training provided to nearly 200 people, successful demonstration of water saving irrigation techniques and the development of new models for integrating climate change into development planning, this project built capacity for sustainable, resilient growth in Kyrgyzstan.

#### Key results

- Provided training to nearly 200 people to improve management capacities of WUAs on water accounting, asset management, efficient water-use technology and climate adaptation planning
- Developed new models to integrate climate change into development planning for review by the national government
- Successfully piloted improved irrigation techniques, saving 7,900 m<sup>3</sup> and creating a replicable model for other communities

**EDM Generation 2 Project**

**Title:** Capacity building of government institutions and civil society organizations for promotion of climate resilient and sustainable development planning

**Implementation period:** 2013-2014

**Implementing agency:** UNDP Kyrgyzstan

**Location:** Batken Region, Kyrgyzstan

**Budget:** 74,456 USD (EDM: 58,485 / Co-financing: 15,971)

# LEBANON



## At a glance:

- Number of projects: 4
- People gaining improved access to drinking water and sanitation: 400
- People gaining improved adaptive capacity to climate change: 8,470
- People reached by awareness activities: 39,823

### Implementing partners and contributors

UNDP Lebanon • American University of Beirut • Arcenciel

## Key project results

- In Marwaheen, the volume of a communal pond was increased by 13,230 m<sup>3</sup> and farmers benefited from modern farming training sessions.
- The installation of water harvesting systems in two schools supply approximately 1,025 m<sup>3</sup> of rainwater per year and provide approximately 400 students with increased access to water
- New household water saving devices save an estimated 149,504 m<sup>3</sup> of water per year and benefits 6,600 community members
- The demonstration of water efficient solutions has directly benefitted 210 farmers, engineers and students in Tanail. Over the project demonstration site, the water efficient practices have saved 52,185 m<sup>3</sup> of water

## Reclaiming traditional water conservation practices

The village of Marwaheen is short of water both for agricultural and household needs. In times of war, the village pond was neglected. The difficulty of maintaining the earth floor of the reservoir meant a considerable amount of water was lost to infiltration. As many inhabitants of Marwaheen make a living from agriculture, the faulty pond and lack of water had a significant negative impact on the 100 farmers and 300 families in the area. The EDM project supported the rehabilitation of the communal pond by working in collaboration with the Marwaheen municipality. It further supported farmers to modernize irrigation and cultivation practices, providing them with trainings, expert consultations as well as seedlings and organic fertilizers. As a result, the storage capacity of the pond more than doubled, increasing from 12 770 m<sup>3</sup> to 26 000 m<sup>3</sup> and water losses from infiltration were reduced. The increased water available for irrigation has enabled the community to also double the amount of land used for agricultural production and switch to more profitable crops, such as vegetables.

### Key results

- Rehabilitated a village pond in Marwaheen, increasing its storage capacity from 12,770-m<sup>3</sup> to 26,000 m<sup>3</sup> and reduced water losses from infiltration
- Trained 22 farmers in modern irrigation and cultivation techniques
- Enabled farmers to increase land used for agricultural production from 1.2 hectares to 2.5 hectares, which is now used to grow vegetables

#### EDM Generation 1 Project

**Title:** Reclaiming the traditional water conservation practices in rural south Lebanon – the case of Marwaheen village

**Implementation period:** 2011-2013

**Implementing agency:** American University of Beirut

**Location:** Marwaheen, South Lebanon

**Budget:** 104,000 USD

(EDM: 75,000 / Co-financing: 29,000)

## LEBANON

### Reviving dropped wisdom

Rainwater harvesting, once a traditional component of Lebanese society, has become a lost art due to new construction techniques and modern planning. With a growing population and dry climate, capturing rain to boost water supplies is a wisdom too precious to be forgotten. This project installed new rainwater harvesting systems in two schools and one community centre, which were able to increase local water supply by 1,022 m<sup>3</sup> each year. Beyond collecting the water that falls from above, the project also acted to raise awareness on how to conserve water in their everyday activities by creating five water education centers and disseminating a wide range of instructional materials, movies and engaging activities.

#### Key results

- Constructed three rainwater harvesting systems in schools and community centres
- Increase local water supply by more than 1,000 m<sup>3</sup> per year
- Created five water education centers, attracting 2,000 students visits
- Trained 10 staff members to run the education centers
- Produced an educational booklet distributed, movies, posters and materials used by 7,000 students nationwide
- Organized a high profile book launch on World Water Day with the Minister of Water and Energy, Lebanon



**EDM Generation 2 Project**  
**Title:** Rainbow Drops

**Implementation period:** 2012-2013  
**Implementing agency:** Arcenciel  
**Location:** Damour, Jisr el Bacha, Masser el Chouf, Tanail and Halba, Lebanon  
**Budget:** 136,722 USD (EDM: 99,792 / Co-financing: 36,930)

## Helping households save water

Lebanon is a highly water stressed country whose sustainable future will depend on improved water use efficiency as well as water demand management. In the town of Shaileh, households must endure limited and irregular water supply, with frequent shortages making everyday tasks such as showering and dishwashing difficult. This problem has a ripple effect on the health and hygiene of the village population. This EDM project, implemented in cooperation with the Ministry of Water and Energy, demonstrated the potential to reduce domestic demands placed on water resources through the use of simple water saving devices in Shaileh village. The project created and distributed water saving kits for households – including several water efficient fixtures for taps, shower heads, and toilet cisterns – which were installed by local water authorities. It also raised awareness among households on everyday actions that can be taken to save water. As a result, water conservation was increased by 34% in the town and is expected to serve as effective model for replication across the country.

### Key results

- Designed created and installed water saving kits in 1,665 households
- Produced and disseminated educational materials on the use and benefits of water saving devices and tips to reduce water use in daily activities
- Improved water conservation by 34% and provide effective model for replication across the country
- Saved more than 1,000 m<sup>3</sup> of water per year
- Created five water education centers, attracting 2,000 students visits
- Trained 10 staff members to run the education centers
- Produced an educational booklet distributed, movies, posters and materials used by 7,000 students nationwide
- Organized high profile book launch on World Water Day with the Minister of Water and Energy, Lebanon

#### EDM Generation 3 project

**Title:** Introduction of water efficient fixtures as a demand side technique in Lebanon

**Implementation period:** 2014

**Implementing agency:** UNDP Lebanon

**Location:** Helaliye, Jeita, Ain Rihani, Aintoura, Al-Rawadi, and Al Jeyel Batroun

**Budget:** 119,500 USD

(EDM: 100,000 / Co-financing: 19,500)

## LEBANON

### Growing greener in the Bekaa valley

The Bekaa Valley in Lebanon is the primary agricultural zone of Lebanon. To sustain productive farming in the region, amid growing demand and scarcity of water, major improvements in water efficiency are needed. The EDM project established a pilot site in Tanail, Bekaa to test an integrated water conservation system to optimize agricultural practices. In its first year, an annual water saving of 52,185 m<sup>3</sup> at the demonstration location was achieved – equating to a water and energy savings of more than 40%. The installation of an advanced monitoring systems resulted in 20% reductions of fertiliser and pesticide use, demonstrated significant opportunities to reduce both water consumption and pollutions from agriculture while simultaneously improving the quality of crop production and lowering labour costs. This leads to an estimated annual cost reduction of 9,000 USD for a 3.3 hectare site. The success of the demonstrations should be scalable to other agricultural areas in Lebanon which would exponentially increase the potential for productivity and water saving gains achieved in the demonstration.

#### Key results

- Installed an automated drip irrigation system, including 10,830 drippers, covering 3.3 hectares to optimize water delivery based upon soil moisture and temperature
- Installed dendrometers (sensors that measure the moisture content of orchard plants) which support farmers to better understand the short-term growth response in relation to changes in climatic conditions
- Installed dosatron water powered dosing pumps to control and prevent overuse of fertilizer to reduce pollution entering water bodies
- Installed a phytogram (a hydration sensor for plants) that provides a precise indication of a plant's water requirements to optimize crop growth and water use efficiency
- Built a weather station to monitor rainfall, temperature and humidity and signal when conditions are conducive to specific certain pests and enable limited optimal use of pesticides
- Achieved a 20% reduction of fertiliser and pesticide use and 43% improvement in water and energy efficiency in the demonstration area
- Achieved an estimated saving of 52,185-m<sup>3</sup> of water per year at the demonstration location
- Capacitated 100 farmers in the Bekaa valley, 60 men and women working of Tanail and 50 university students

#### EDM Generation 4 project

**Title:** Agricultural Response for Development

**Implementation period:** 2014-2015

**Implementing agency:** Arcenciel

**Location:** Tanail

**Budget:** 127,750 USD

(EDM: 900,00 / Co-financing: 37,750)

اسم المشروع  
التبوع التشاركي في إعادة استخدام المياه الرمادية في الزراعة المنزلية  
Community Based Approach for Reuse of Grey Water at  
Home Farming

الجهات المنضدة  
  
المركز الوطني للبحث والارشاد الزراعي  
National Center for Agriculture Research and  
Extension

بالتعاون مع  
  
المركز الدولي للبحوث الزراعية في المناطق الجافة  
International Center for Agricultural Research in  
Dry Areas

الجهات الممولة  
Funded by  
  



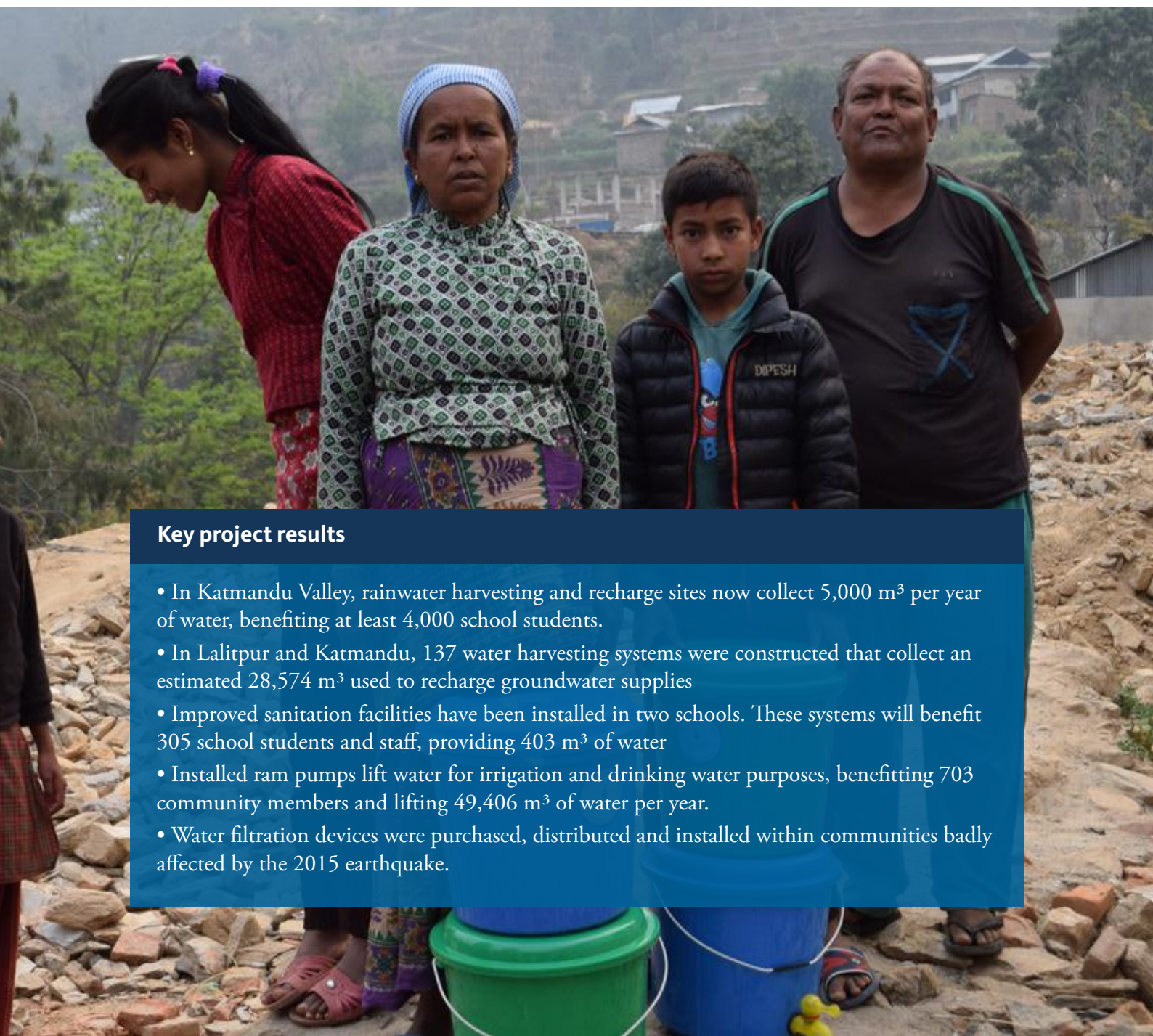

# NEPAL

## At a glance:

- Number of projects: 6
- People gaining improved access to drinking water and sanitation: 16,057
- People gaining improved adaptive capacity to climate change: 9,045
- People reached by awareness activities: 41,311

### Implementing partners and contributors

UNDP Nepal • Center for Integrated Urban Development • Integrated Development Society Nepal • Centre for Rural Technology Committed Society for Change Nepal • Community of Kathmandu • Community of Lalitpur • Ghatta Owners Association Water User Community - Ladku Chanatue • Water User Community – Balthali • Water User Community – Dhunkharka Water User Community – Sankhu • Alternative Energy Promotion Centre • Korean Development Aid



## Key project results

- In Katmandu Valley, rainwater harvesting and recharge sites now collect 5,000 m<sup>3</sup> per year of water, benefiting at least 4,000 school students.
- In Lalitpur and Katmandu, 137 water harvesting systems were constructed that collect an estimated 28,574 m<sup>3</sup> used to recharge groundwater supplies
- Improved sanitation facilities have been installed in two schools. These systems will benefit 305 school students and staff, providing 403 m<sup>3</sup> of water
- Installed ram pumps lift water for irrigation and drinking water purposes, benefitting 703 community members and lifting 49,406 m<sup>3</sup> of water per year.
- Water filtration devices were purchased, distributed and installed within communities badly affected by the 2015 earthquake.





## NEPAL

### Invaluable drops recharge Katmandu

In Katmandu Valley, many communities are vulnerable to both shortages of water and flooding. With the local stream near empty in the dry months, households must buy water from private suppliers. This EDM project established a team of professionals to support local communities in improve water conservation and rainwater collection, control run-off and recharge groundwater supplies. Together they demonstrated solutions for groundwater recharging at the household, institutional, and community level, including the use of wells and recharge pits that improved water supply for 4,000 people.

#### Key results

- Set up a 5 person team to support a community mobilization programme
- Improved total water supply for 4,000 people
- Formed a water conservation group that constructed retention ponds and erosion control measures
- Built capacity in water efficiency in local communities
- Engaged local authorities to provide suitable land for livestock grazing and energy sources for cooking to prevent clearance of forest cover

**EDM Generation 1 Project****Title:** Invaluable drops-recharge Kathmandu**Implementation period:** 2011-2012**Implementing agency:** Center for Integrated Urban Development**Location:** Kathmandu Valley**Budget:** 95,000 USD (EDM: 95,000)

## NEPAL

### Restoring the water balance

Urban municipal water supplies in Nepal today are only able to meet 30 percent of demand, and both surface- and ground-water resources are already stressed due to overuse.

This project mobilized local communities to construct and test rainwater harvesting and recharge systems to improve local water supply and restore safe groundwater levels in the Katmandu valley and in Lalitpur, Nepal. Results have been impressive and immediate: for example, a single hospital in Dallu Awas now saves 12,000 litres of tanker supplied water a week, lowering its annual water bill by 900 USD. In total, 120 water harvesting systems have been constructed in Lalitpur and an additional 17 built in Katmandu. These collect an estimated 28,000 m<sup>3</sup> used to recharge groundwater supplies. Building on this success, project partners initiated large public campaigns consisting of workshops, national exhibitions, media articles, nationally broadcast documentaries and door-to-door canvassing in communities to advocate the importance of water, rainwater harvesting and groundwater recharge.

#### Key results

- Mobilized local communities to harvest rainwater and recharge the valley's ground-water
- Constructed 120 rainwater harvesting and recharge systems in Lalitpur and 17 in Kathmandu
- Conducted new research on rainwater harvesting and recharge, wetlands, and on filter media.
- Mass awareness campaigns, including twenty orientation programmes, new articles, nationally syndicated radio and film documentaries
- An estimated 28,574 m<sup>3</sup> of water is now being harvested for household use and ground-water recharge



#### EDM Generation 2 Project

**Title:** Community led water recharge management project

**Implementation period:** 2012-2013

**Implementing agency:** Kathmandu City and Lalitpur Sub-Metropolitan City

**Location:** Center for Integrated Urban Development

**Budget:** 115,003 USD (EDM: 99,748 / Co-financing: 14,755)

## Following their lead: Helping children become champions for WASH

Roughly half of the schools in Bhaktapur lack clean drinking water and sanitation facilities. This EDM project worked to improved water and sanitation facilities in Panachakanya Secondary School to help its 285 students and teacher live, work and study in a safer environment. It also strived to make students part of the solution to raise awareness and activate their communities to build and maintain, safe climate resilient water and sanitation facilities. Children’s eco-clubs were formed and led by students to organize public and school wide events in conjunction with World Environment Day, Children’s Environment Day, Handwashing Day and the National Sanitation Week. Further actions were taken to provide training on waste management, including reduction, reuse and recycling of waste, as well as healthy hygiene promotion. Building upon the experiences gained at Panachakanya Secondary School, a School-Led Climate Resilient WATSAN Guidelines was produced to lead concerted action at schools throughout the country. The guidelines, together with lessons learned from the project successes have been shared and discussed with district and national level authorities.

### Key results

- Provided improved and increased access to clean drinking water and sanitation to 285 students and teachers, including the installation of new toilets and drinking water facilities
- Constructed rainwater harvesting system to increase water storage capacity
- Established children’s eco-clubs which held student led awareness raising events
- Provided water management and healthy hygiene training to students and teachers
- Produced national relevant “School-led Climate Resilient WATSAN Guidelines” than have been disseminated at national and district level workshops

#### EDM Generation 3 Project

**Title:** Enhancing climate resilient school WATSAN through child centered interventions

**Implementation period:** 2013-2014

**Implementing agency:** Integrated Development Society Nepal

**Location:** Bhaktapur District

**Budget:** 49,355 USD (EDM: 43,855 / Co-financing: 5,500)

## NEPAL

### Providing safe drinking water to earthquake victims

The April 2015 earthquake devastated the Northern districts of the Central Development Region of Nepal. The quake had completely destroyed more than 500,000 houses and damaged many more, leaving nearly 9,000 dead and 20,000 injured. Dry landslides that followed the quake added to the toll as it damaged roads, agriculture land and drinking water systems. An estimated 2.8 million people were in need of humanitarian support as a result of the disaster, and the provision of safe drinking water was among the most critical challenges to victims forced to live in tents or temporary settlements. The EDM project helped distribute 178 micro-filters and installed 15 reverse osmosis filters to provide clean drinking water to earthquake victims and schools in the Sindhupalchok and Dolkha districts where the settlements are widely dispersed. It also trained 650 people to properly use the filters, including at least from each household served. This increased safe drinking water availability to 250 households, 20 communities and 2,360 people.

#### Key results

- Trained 650 people (at least one from each household) oriented/trained on how to properly utilize the water filters
- Procured and disseminated 178 micro water filters
- Installed 15 Reverse osmosis water filters
- Increased safe drinking water availability in 250 Earthquake victim households, 20 communities and for 2,360 people



#### EDM Generation 3 Project

**Title:** Safe Drinking Water to Earthquake Victims

**Implementation period:** 2015-2016

**Implementing agency:** UNDP Nepal

**Location:** Sindhupalchok and Dolkha districts

**Budget:** 20,000 USD (EDM: 20,000)

## Helpful hydrams

The EDM project in Kavrepalanchowk district piloted a hydraulic ram pump (hydram) technology. Through the installation of this technology, EDM has helped the communities within Dhungharka, Balthali, Dhukharak, and Sankhu abstract water for water sources which lay lower than their land, providing access to drinking and irrigation water. The installed hydram systems lifts approximately 135,360 liters of water per day, directly benefiting more than 700 people that now have a reliable drinking water source that reaches their household. This increase in available water for irrigation has enabled communities to irrigate new farm land, using sprinkler systems to grow high value crops. In this pilot, farmers built 13 poly-tunnels, used for growing tomatoes, each of which can yield approximately 250 kg of produce per harvest. There is a large scope and proven value to scale-up the hydram project in Kavrepalanchowk district and replicate it in similar communities across Nepal. With the demonstrated effectiveness of the hydram installation, there should be several means for communities to access financing from local government agencies or micro-financing institutes that provide loans for rural communities to finance the technology. This would help contribute to more sustainable rural development in the region.

### Key results

- Installed hydram systems to that increase access to approximately 135,360 liters of water per day and serve 703 people
- Supported the construction of 47 toilets and rehabilitation of 18 dilapidated systems.
- Enabled communities to irrigate 7.9 hectares of farm land, using sprinkler systems to grow high value crops.
- Built 13 poly-tunnels, for tomatoes growing that yield approximately 250 kg of tomatoes per harvest (500 kg per year).
- Working directly with the local communities, the project capacitated them on the repair and maintenance of the installed technologies



#### EDM Generation 3 Project

**Title:** Livelihood Enhancement through Hydraulic Ram Pump in Kavrepalanchok District

**Implementation period:** 2013-2014

**Implementing agency:** Centre for Rural Technology

**Location:** Kavrepalanchok District

**Budget:** 67,028 USD

(EDM: 60,845 / Co-financing: 16,183)

## NEPAL

### Lifting water for mountain development

Availability of water is crucial to improve rural livelihoods in the mountain regions of Nepal. A majority of farmers in the hills and mountains grow only one crop and leave their lands barren for most of the year as this is all that can be supported with current practices that depend on rainfall and gravity irrigation systems. While there is plenty of water in the rivers and rivulets that could be lifted to irrigate the barren land to grow three cycles of high value crops, and also provide drinking and household uses, a lack of electricity, proper technologies and awareness on possible solutions impede farmers from access it. The EDM project demonstrated a solution by installing four micro hydro-operated systems and one solar power operated lift irrigation system in different villages of Dhading district. The installed systems pump water uphill to settlements and store it in large tanks. The collected water is then distributed through networks of pipes and distribution tanks for drinking, micro irrigation and other household uses. Altogether the project has provided water to 163 households, with 815 people and helped them spend significantly less time collecting water. Farmers have already initiated planning for vegetable farming during the dry season and have received additional training on farming, marketing and preparation of agricultural plans.

#### Key results

- Installed four micro hydro-operated lift irrigation systems and one solar power operated lift irrigation system in villages
- Provided water to 163 households, totaling 815 people
- Decreased water collection time and burden, particularly for women and children
- Enabled and provided training vegetable farming during the dry season, improving rural livelihoods



#### EDM Generation 4 Project

**Title:** Micro Hydro Operated Lift Irrigation in Nepal

**Implementation period:** 2015-2016

**Implementing agency:** Committed Society for Change Nepal

**Location:** Dhading District

**Budget:** 123,759 USD

(EDM: 63,759 / Co-financing: 77,000)





# PAKISTAN

## At a glance:

- Number of projects: 5
- People gaining improved access to drinking water and sanitation: 17,600
- People gaining improved adaptive capacity to climate change: 1,200
- People reached by awareness activities: 22,580

### Implementing partners and contributors

Human Development Organization Doaba • Integrated Rural Awareness and Development Organization • UNDP Pakistan Society for Conservation and Protection of Environment • Indus Earth Trust • Sustainable use specialist group – Central Asia



## Key project results

- In the Thar Desert area, three water harvesting ponds, three bunds and two wells provide improved access to water for domestic and agricultural purposes for 2,400 households.
- In Malakland, EDM supported local residents to grow 100,000 plants and constructed dozens of check dams to support soil conservation and buffer against flash flooding.
- In Karachi, a new water purification and bottling plant was created to provide clean, affordable water to approximately 3,000 community members.
- In Thatta, approximately 1,000 households benefitted from the construction on tube wells that provide 28,800 m<sup>3</sup> of water.
- In Balochistan, the installation of water storage systems and wells, has increased access to drinking water for 1,000 people, providing approximately 7,300 m<sup>3</sup> of water.





## Growing more resilient, robust communities in Malakland

Most of the more than 2,000 families live in the Malakland region are farmers, and depend on available water for their livelihood. While the region is famous for its fruit production, its people and these high value crops are vulnerable to flash flooding, droughts and sinking groundwater levels. Vulnerability to flood risk has been accelerated by massive deforestation in the region over the past half century, as the lands have low capacity to retain water or slow the flow of runoff during heavy rainfall. The EDM project worked to stem the tide and rebuild resilience into the landscape by planting thousands of plants and trees as well as constructing check dams to conserve soil, increase infiltration and prevent flash flooding. The trees planted will also reduce dependency on high value and slow growing timber plants for fuel wood. Further, planting on private lands will shift the community's fuel reliance to their own plants instead of those on communal lands. This shift will allow the forest to grow to a much larger scale, and also create opportunities to improve the people's livelihoods through planting fruit trees on their lands that will become a cash commodity during the next half-decade.

### Results

- Supported local residents to grow 100,000 plants in more than 275 acres of land, both on public and private properties
- Constructed dozens of check dams to support soil conservation and buffer against flash flooding.
- Employed 330 people from the local community, especially young people, to work on reforestation and distributing plants.

#### EDM Generation 1 Project

**Title:** Climate change and improved and efficient water and natural resource management for livelihoods

**Implementation period:** 2012-2013

**Implementing agency:** Human Development Organization Doaba

**Location:** Malakland, Pakistan

**Budget:** 70,000 USD (EDM: 56,000 / Co-financing: 14,000)

## PAKISTAN

### Milking the monsoon

Severe water shortage is a major constraint to economic development in the Thar desert area. For centuries, the local people have relied on groundwater recharged by monsoon rains, despite intermittent periods of drought. Rainwater is the only water resource for agriculture and the main source of drinking water in the area. The people's livelihoods depend on rain, so a poor monsoon season can lead to disaster. The EDM project increased collection capacity in the Tharparkar District, Sindh Province through the construction of a check dam and earthen water harvesting bunds that could store rainwater for use in the drought season. This helped increase water supply for drinking water and irrigation to more than 2,400 households, improve local communities health and economies. Through a quarterly newsletter and popular radio program, it raised awareness on water conservation for more than 19,000 people.

#### Results

- Constructed a check dam and earthen water harvesting bunds to store rainwater for use in the drought season
- Increased water supply by 12,350 m<sup>3</sup> of water and provided 2,400 households increased access to safe drinking water and water for crop irrigation
- Raised awareness on water conservation and protection through quarterly community newsletters and a radio programme, reaching 19,000 people
- Provided local temporary employment (6 months) to 360 people
- Reduced agricultural workload for families to collect water will enable many households to start sending children to schools



#### EDM Generation 1 Project

**Title:** Rainwater harvesting to maximize domestic use of natural water resources  
Implementation period: 2011-2013

**Implementing agency:** Integrated Rural Awareness and Development Organization

**Location:** Veerawah, Nagarparkar and Peethapur villages of Taluka Nagarparkar, Tharparkar District

**Budget:** 81,000 USD (EDM: 68,000 / Co-financing: 13,000)

## Seeking safe water solutions

Roughly 40 percent Karachi’s population – nearly 7 million people – live in squatter settlements without access to safe drinking water and sanitation. Low income families, unable to afford the cost of clean water, have two options and no safe choice: either take contaminated groundwater from wells or buy water from street vendors, with no assurance that it is actually safe to drink. This project aimed to introduce an alternative by constructing a water purification plant near Model Colony and Saudabad, Karachi. A not-for-profit operation, the plant treats ground and municipal water, bottles it and sells it at an affordable, subsidized cost. Families were selected as eligible to purchase the water following a poverty score card assessment to ensure that those most in need received priority.

While this project ultimately was not able to demonstrate a fully sustainable model for its continued operations, it did test a novel concept that may be able to adapted in other places. A key challenge to consider is planning for the distribution of the bottled water. In this case, it was quickly apparent that motorized carts were needed to deliver water to slightly farther distances, and this significantly changed both the budgetary and operational requirements of the project.

### Results

- Tested an innovative model to improve access to clean water and living conditions in slum areas
- Established a water purification plant that treats groundwater and municipal tanker water through reverse osmosis purification
- Provided access to clean drinking water to 3,000 people during the project period
- Raised awareness of community members on risks related contaminated water through house visits and educational materials



#### EDM Generation 2 Project

**Title:** Provision of Clean Drinking Water in Squatter Area of Malir, Karachi

**Implementation period:** 2012-2014

**Implementing agency:** Society for Conservation and Protection of Environment (SCOPE)

**Location:** Malir, Karachi

**Budget:** 100,000 USD (EDM: 100,000)

## PAKISTAN

### Finding clean water after the flood

Like many places in Pakistan, Thatta was hit severely by the 2010 monsoon that submerged one-third of the country with flood water. Houses, roads, schools, medical facilities and water infrastructure were destroyed throughout the district, making the collection of drinking water more difficult, with sources fewer and farther between as well as of less reliable quality. This project in Thatta District helped improve access to safe drinking water for communities in 25 villages. The project installed 150 mm diameter tube wells in each village. These tube wells, which lift water using solar pumps, are connected to above ground storage tanks. As a result of project, approximately 1,000 households have gained access to safe drinking water. As the drinking water source is now within villages, the burden on women has reduced. They now have more free time for other activities, are less physically stressed, and have a greatly reduced risk of injury when collecting water. Through the training sessions, women have a greater awareness of health related sanitation problems. Community management organizations (CMO) were set up to manage the operation and maintenance of the tube wells. The CMO collects fees from each village household, for the specific purpose of maintaining the new technology.

#### Results

- Installed 150 mm diameter tube wells in 25 villages, improve access to safe drinking water for more than 1,000 households
- Provided training of water protection, healthy hygiene and sanitation
- Established community management organizations to maintain the water systems and advocate replication in neighboring areas



#### EDM Generation 3 Project

**Title:** Water conservation through sustainable community led drinking water supply

Implementation period: 2012-2014

Implementing agency: Indus Earth Trust

Location: Sindh Province

Budget: 102,567 USD (EDM: 99,996 / Co-financing 2,571)



## PAKISTAN

### From dirty ditches to safe storage

Following a decade of nearly continual droughts, traditional water sources in the Nushki district of Balochistan, Pakistan are running dry. Faced with salinity in groundwater resources and poor water supply infrastructure, communities have created ditches to store rainwater. However, this water is easily contaminated resulting in the rapid spread of water related illnesses when used as drinking water. Working with the local community, in partnership with the village organisations of Shakrab and Naseeraba, the EDM project increased access to safe drinking water and sanitation. The project installed a water supply system and sanitation facilities, helping 1,000 village inhabitants gain access to safe drinking water. It also provided training in health, hygiene and water conservation.

#### Results

- Installed a water supply system to the villages of Shakrab and Naseeraba, helping 1,000 village inhabitants gain access to safe drinking water
- Created a large water storage reservoir and three storage tanks that connect to drinking water access points using a solar powered submersible pump
- Installed a rainwater harvesting system with fencing and filtration systems installed to reduce risk of contamination
- Constructed 20 sanitation facilities for the community and two within schools, and trained ten community members on their operation and maintenance
- Conducted health and hygiene sessions for 80 women and children
- Engaged community and civil society actors to promote water conservation

**EDM Generation 4 Project**

**Title:** Integrated water supply and sanitation

**Implementation period:** 2014-2015

**Implementing agency:** Sustainable use specialist group – Central Asia

**Location:** Balochistan

**Budget:** 103,000 USD

(EDM: 100,000 / Co-financing: 3,000)



# PALESTINE

## At a glance:

- Number of projects: 5
- People gaining improved access to drinking water and sanitation: 2,116
- People gaining improved adaptive capacity to climate change: 116
- People reached by awareness activities: 3,435

### Implementing partners and contributors

Land Research Centre • House of Water and Environment • Agricultural Development Organization  
Palestinian Hydrology Group for Water and Environmental Resources Development  
Palestinian Wastewater Engineering Group • UNDP Palestine

## Key project results

- Trees planted along a 4 km stretch of the Wadi Al-Samin wastewater stream to improve water quality. This allows 3,200 m<sup>3</sup> of waste water to safely irrigate alternative income plants, benefiting 86 farmers.
- In Ramallah, a grey water treatment plant of 138 m<sup>3</sup> has been constructed at a community club, directly benefiting 516 club members and 1,016 users of the club garden.
- In Beit Skarya Village, improved water storage and waste water treatment systems save approximately 3,255 m<sup>3</sup> of water per year.
- Ramallah and al-Bireh Governate, the installation of water efficient technologies is saving 56 farmers approximately 9,125 m<sup>3</sup> of water per year.
- Rehabilitation of the Auja spring canal has reduced losses along its reach by approximately 3,000,000 m<sup>3</sup>.

## Putting bad water to good use

Discharging untreated wastewater into channels running through farmland is causing serious environmental problems in Palestine, especially when this water is used to irrigate crops. Over the last 50 years, an untreated wastewater stream near Hebron city with a total length of 44 km – passing through 18 Palestinian communities – has polluted 685 hectares of agricultural land. The affected land is seriously polluted with chromium (a cancer causing heavy metal) levels in the soil five times higher than the safe limit. This devastates the surrounding environment, and makes it unsuitable for people to live in. Furthermore, the stream has had a drastic effect on the economy by destroying huge areas of cropland and grazing land. The EDM project introduced a solution that is both safe and economically sustainable: it planted groves of eucalyptus trees so that the untreated wastewater can be used to produce wood instead of food. It also made all data publicly available for similar projects, academics, and decision makers, both raising awareness and enabling scaling up in other communities.

### Key results

- Successfully demonstrated a safe and sustainable solution to lessen impacts of wastewater intrusion on agricultural land in Palestine
- Planted 4,000 eucalyptus seedlings along a 4-km-long section of the stream which is home to four Palestinian communities
- Engaged local farming communities on timber tree planting as a safe alternative crop through field meetings, training sessions and lectures
- Raised awareness of decision makers on this efficient and safe use of a wastewater and built the capacity of farmers and Ministry of Agriculture agronomists
- Alerted communities to the risks of using untreated wastewater in fruit and crop production

#### EDM Generation 1 Project

**Title:** Use of Wadi Al-Samin wastewater stream in producing woody plants

**Implementation period:** 2011-2012

**Implementing agency:** Land Research Center

**Location:** Dura, Rabud and Karma

**Budget:** 46,670 USD (EDM: 35,000 / Co-financing: 11,670)

## PALESTINE

### Grey water: from pollution to solution in water scarce Ramallah

Many people in Ramallah, Palestine depend on local springs to meet their water needs and face dangers of being exposed to contaminants from untreated and improperly disposed wastewater. Where centralized waste water treatment facilities are too costly to build and operate, decentralized systems can provide viable alternative solutions. They can also provide solutions to improve water use efficiency by utilizing safe greywater for irrigation. The EDM projected demonstrated the use of such a decentralized greywater treatment facility at the Deir Ammar Club in Ramallah, which sought to serve a local community of 500 people and also provide a model to serve as a catalyst for similar projects in the country.

#### Key results

- Demonstrated a greywater treatment system, benefiting the 516 club members and also users of the club garden.
- Reduced contaminant levels in greywater, proving the effectiveness of the treatment system and leading to immediate cost reductions.
- Provided additional water source from treated grey water to irrigate the club garden, reducing the cost of accessing water from other sources.
- Built capacity in local staff on operation and maintenance training to ensure the long-term use of the system.



#### EDM Generation 1 Project

**Title:** Construction of onsite grey wastewater treatment plant at Deir Ammar Club

**Implementation period:** 2011-2012

**Implementing agency:** House of Water and Environment

**Location:** West Bank, Ramallah

**Budget:** 111,000 USD

(EDM: 40,000 / Co-financing: 70,000)



## Supporting water-secure communities

Like many villages in Palestine, the existing storage, distribution and treatment systems in Kherbet Biet Skaria are unable to provide a reliable and safe supply of water. Nearly one of every three villagers in the area must buy water from neighboring settlements, often at unreasonable prices. Inadequate water treatment increases the spread of water-borne diseases, posing serious health risks to children and the elderly. This project rehabilitated five cisterns and constructed nine storage tanks resulting in improved local access to drinking water, rainwater collection and overall water storage capacity throughout the village. Nine wastewater treatment systems with direct piped connections to each household were built to separate black- and greywater. The greywater is now safely used to irrigate home gardens. With a more regular local supply, an average family saves time and money collecting and buying water from outside and is able to produce up to 25 kilograms more fruit and vegetables each year.

### Key results

- Constructed nine polythene storage tanks and nine decentralized treatment systems
- Rehabilitated five cisterns for local drinking water supply
- Increased local water storage capacity by 600 m<sup>3</sup> per year
- Created 12 new home gardens and trained 45 farmers to maintain them
- Spread learning with national authorities and international community through workshops with UNDP, Palestinian Farmers Union and the Ministry of Agriculture.

**EDM Generation 2 Project**

**Title:** Improving the livelihood conditions (water and sanitation) of Beit Skarya Village

**Implementation period:** 2012-2013

**Implementing agency:** Agricultural Development Organization (PARC)

**Location:** Beit Skarya Village

**Budget:** 88,847 USD (EDM: 71,580 / Co-financing: 17,267)

## PALESTINE

### Creating climate smart solutions to scarcity

The village of Dura al-Qar', Ramallah and al-Bireh Governate have very scarce water resources. Each person has only 28 litres available per day, a number well below the minimum volume suggested by the World Health Organization. Though connected to a piped water network, service is often disrupted and infrastructure is poorly maintained. Springs located around the village are used as an additional water source, but they are also poorly maintained and can pose health risks. With nearly 3 in 5 people in the communities dependent on rain-fed agriculture, making the village highly vulnerable to climate change that will likely lead to increasing droughts and lower total rainfall. The EDM project supported local communities to protect natural spring resources and develop management strategies to reduce distribution losses between water sources and farm locations. It also worked to improve farm water efficiency by introducing drip irrigation technologies, and make access to springs safer for those collecting water for household purposes. Through the installation of a new supply line, from the spring to agricultural land, water use efficiency increased 40%, leading to a water saving of over 9 000 m<sup>3</sup> per year. This has provided new opportunities to farmers to grow alternative, more profitable crops, such as strawberries and leafy vegetables.

#### Key results

- Developed water collection points at springs with paving for access and sun canopies installed.
- Installed 1,400 m of supply lines from spring sites to farm land to reduce water losses during transportation.
- Connected drip irrigation systems to the supply line, covering a one-and-a-half-hectare demonstration plot.
- Provided training to farmers on modern farming and irrigation systems, water use efficiency, organic farming and climate adaptation strategies.
- Increased local water use efficiency has increased by 40 %, and a total water saving of over 9,000 m<sup>3</sup> per year.
- Built pathways and shaded sitting areas at local springs to reduce strain and provide public spaces for social activities when collecting water.

#### EDM Generation 3 Project

**Title:** Efficient water resource management to reduce the impacts of climate change

**Implementation period:** 2014

**Implementing agency:** Palestinian Hydrology Group for Water and Environmental Resources Development

**Location:** Ramallah and al-Bireh Governate

**Budget:** 70,000 USD (EDM: 70,000)

## Restoring Auja Spring

Auja spring is a typical example of one of the West Bank's many springs. The canal that transports the water to its users is filled with debris, cracked, poorly maintained and inappropriately used for washing livestock. As a result, 25–35 % of the transported water is lost along its transit, and downstream users are affected by contamination caused by livestock. The EDM project worked to rehabilitate the Auja canal, improving the quality of water delivered to 1 200 people and reducing unnecessary losses by an estimated 3 million m<sup>3</sup> of water per year. With the water savings achieved by reducing leakage improved production in irrigated agriculture should be possible. The project further serves as an effective demonstration site to other communities, so that they understand the value of maintaining and restoring the 297 springs of Palestine. Many springs in the region face similar needs for restoration and pollution reduction measures that could learn from and replicate the results achieved in Auja.

### Key results

- Cleaned Auja spring water outlet and re-stored of the 1.9 km of the canal, leading to an estimated reduction of 3 million m<sup>3</sup> of water losses per year
- Constructed five drinking troughs and five wash basins for livestock.
- Provided 1,200 community members with improved quantity and quality of water supply
- Trained local farmers and Bedouin community members on safe water use and effective water treatment.



#### EDM Generation 4 Project

**Title:** Rehabilitation of Auja Spring

**Implementation period:** 2015

**Implementing agency:** Palestinian Wastewater Engineering Group

**Location:** Jericho

**Budget:** 98,102 USD (EDM: 89,902 / Co-financing: 8,200)

# RUSSIA



## At a glance:

- Number of projects: 9
- People gaining improved access to drinking water and sanitation: 36,800
- People gaining improved adaptive capacity to climate change: 7,100
- People reached by awareness activities: 101,038

### Implementing partners and contributors

UNDP Russia • UNDP GEF • Baikal Information Centre • Volgograd state socio-pedagogical university  
Volga-Aktuba floodplain nature park • Frunzenskoye community administration • LLC Ovoshevod  
Bright Hearts volunteer group • Volga-Akhtuba National Park Authority • Leninskiy District Authorities



## Key project results

- Restoration of Lake Sotova, increased its surface area by 180 times to 102,916 m<sup>2</sup>, benefiting 6,100 community members and tourists.
- Restoration of Lake Sazany, has increased the its volume by 100,000 m<sup>3</sup>.
- Restoration of Zapornoye lake has increased its volume by approximately 120,000 m<sup>3</sup> during the flood season.
- Thousands of Russian students and teachers have used the Black Sea Box, and additional educational materials produced by EDM such as the 'Baikal Box' and the 'Climate Box'
- Through a series of small grants, diverse activities have have improved access to drinking water to 34,100 people and supplied 15,513 m<sup>3</sup> of water

## Keeping Baikal Beautiful

As one of the world's largest and most beautiful freshwater bodies on earth, Lake Baikal attracts visitors from around the world to enjoy its pristine waters. Maintaining its clean waters and coastline is critical to maintain this natural treasure and the development of the regional economy, particularly its growing tourism industry. EDM empowered local communities and civil society to protect Lake Baikal by financing a series of 30 small grant projects to support the sustainable tourism industry; raise awareness on water conservation; clean-up of coastal environments; and build infrastructure to provide water supply and collect waste. It also developed an award winning educational toolkit – the Baikal Box – used by hundreds of teachers and many fold more students in the region. Many thousands more people were engaged through film festivals, photography exhibitions and international media campaigns to protect the Lake's natural beauty and invaluable ecosystem services. In its second and third phase, EDM focused on reducing water contamination from municipal waste and growing tourism operations through awareness raising and educational activities, as well as direct clean-up campaigns. As a result, thousands of people benefited from improved access to areas around the lake, higher water quality, a healthier ecosystem and more attractive sustainable opportunities for eco-tourism.

### Key results (phase 1)

- Financed eight small grants projects in six local communities
- Created the “Baikal Box” educational tool kit and trained 500 teachers to use it
- Supported clean up campaigns that removed 1.7 tonnes of solid waste from Lake Baikal's coastlines
- Engaged over 2,800 people in public events and media campaigns to protect Lake Baikal
- Improved access to drinking water for 600 people and the living conditions of over 6,000 residents through improved waste management

### Key results (phase 2)

- Financed 14 small grant projects benefiting more than 180,000 people
- Improved access and ecosystem health to areas around Lake Baikal
- Improved water access to 7,500 people
- Introduced the Baikal Box to schools throughout the Republic of Buryatia, who honored the toolkit with the “State Prize for Education”

### Key results (phase 3)

- Financed eight small grant projects
- Installed or improved water systems to directly improve access to water for more than 2,000 people
- Contributed to saving 15,000 m<sup>3</sup> of water
- Engaged more than 60,000 people in public awareness raising event ranging from government, civil society, farmers, schools and resource managers

#### EDM Multigenerational Project

**Title:** Baikal Lake community program - For a cleaner future  
**Implementation period:** 2012-2015  
**Implementing agencies:** UNDP Russia, Baikal Information Center

**Location:** Baikal Lake Basin, Republic of Buriatia

**Budget Phase 1:** 195,534 USD (EDM: 145,000 / Co-financing: 50,534)

**Budget Phase 2:** 205,212 USD (EDM 144,500 / Co-financing: 60,712)

**Budget Phase 3:** 123,000 USD (EDM 95,000 / Co-financing: 28,000)

## RUSSIA

### Restoring Russia's wetlands

The Volga-Akhtuba Floodplain (VAF) is one of the greatest river valleys in the world. It is formed by the great Volga River and its branch, Akhtuba, dividing above Volgograd city. The territory of the Volga-Akhtuba Floodplain Nature Park includes internationally important RAMSAR wetlands and has been nominated for the status of UNESCO biosphere reserve. However, the hydrological regime of the floodplain has been significantly transformed posing major risks to the health of its ecosystem. The EDM project conducted successive projects to demonstrate best practices to restore the health of local ecosystems in three lake regions: Sotovo, Sazany and Zapornoye.

In Lake Sotovo, EDM removed a dam which helped increase the flow of water and restore the lake area from less than 600 m<sup>2</sup> to more than 100,000 m<sup>2</sup>. Through further efforts to restore wintering fish basins and spawning grounds the numbers of fish and nesting bird species continue to increase, making the area more attractive to nature tourist and supporting local economic development.

In Lake Sazany, the natural channel and lakebed were cleared and several unapproved and ecologically destructive small dams removed. This helped increase the lake's flooded area by 40% and some 300 hectares. A number of further measures taken improved fish stocks and habitats for birds and wildlife as well as the recreational areas for tourism and local residents. To ensure progress is sustained and can be replicated elsewhere, monitoring networks, guidelines and study books were produced and disseminated to hundreds of local stakeholders.

In Lake Zapornoye, action was taken to increase the flow of water and storage volume of the lake as well as local access for recreational use of local residents and tourists. The lake's surface area was increased by more than 10% - over 7,000 m<sup>2</sup>, and the overall volume is expected to increase by more than 250,000 m<sup>3</sup> during normal flooding years. As the ecosystem restoration progresses, a continued increase of local use from residents and tourist is expected.



### Key results (phase 1 in Lake Sotovo)

- Removed a dam blocking flow into the lake, enabling an increase in lake surface area from 574 m<sup>2</sup> to more than 100,000 m<sup>2</sup>
- Created wintering fish basins, and restored fish spawning grounds and increased the number of fish and nesting bird species
- Conducted surveys of the local flora and fauna and planted 1,000 trees around the lake
- Provided benefits to 6,100 local community members and tourists from improvements to the lake environment
- Raised awareness on ecosystem protection and restoration through campaigns and production of educational booklets, calendars and publications

### Key results (phase 2 in Lake Sazany)

- Increased the flooded area of Lake Sazany by over 40%, roughly 300 hectares
- Restored the natural hydrological regime of the lake by clearing the natural channel and lakebed and removing several small dams
- Improved habitats for native plants, birds, fish and wildlife
- Improved over 11 hectares of recreational and tourist areas around the lake
- Installed fish spawning and overwintering sites and increased fish stocks

- Restored natural vegetation cover by removing invasive species and replanting 3,200 seedlings plants from seven native species
- Established and built local capacity to run ecosystem monitoring networks
- Engaged 500 people in awareness raising events on sustainable resources management and wetland restoration
- Produced guidelines and educational materials on 'Restoration of lake Sazanie ecosystem', 'Invasive plants in the Volga-Akhtuba floodplain' and 'Restoration of floodplain forest ecosystems'.

### Key results (phase 3 in Lake Zapornoye)

- Cleared the natural channel and the Lake bed, resulting in restored flows and an increase the lakes surface area by 10%, or 7,290 m<sup>2</sup> in the first year, which reach as high as 250,000 m<sup>2</sup> during a normal flood year.
- Planted 4,000 woody plants, 1 100 native flowering plants, 700 marsh plants, and re-introduced 27
- Reintroduced native species to the lake environment, which will gradually improve the natural environment.
- Improved access and local infrastructure to enable local communities, and tourists, gain better access to Lake Zapornoe.
- Organized visits for local communities and tourists and raised awareness on ecosystem conservation to over 3,000 people

#### EDM Multigenerational Project

**Title:** Wetland restoration in the Volga-Aktuba floodplain (Lake Sotovo and Lake Sazany Projects)

**Implementation period:** 2011-2012 (Lake Sotovo) 2013-2014 (Lake Sazany) 2014-2015 (Lake Zapornoye)

**Implementing agency:** UNDP Russia (Lake Sotovo), Volgograd state social and teachers training university

**Location:** Volgograd region, Volga-Akhtuba nature reserve

**Budget Phase 1:** 126,484 USD

(EDM: 50,000 / Co-financing: 76,484)

**Budget Phase 2:** 101,113 USD

(EDM: 50 286 / Co-financing in kind: 50,827)

**Budget Phase 3:** 90,014 USD

(EDM: 50,000 / Co-financing in kind: 40,014)

## RUSSIA

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### Reaching out, driving action for water and climate security

Russia's waters are unique in their scale and beauty, amounting to nearly one fourth of the available global freshwater resource. Maintaining these waters similarly provides unique challenges and opportunities and requires committed action across generations of Russian citizens. In a series of projects EDM worked through education, public awareness, and training to promote sustainable water use, water stewardship, conservation of water-based ecosystems and climate resilience in communities across the country.

In the first phase, EDM held a series of events throughout Russia to increase awareness on water and environmental challenges. These events included dedicated events for specific water bodies within Russia, such as Lake Baikal, the Volga River, and the Black Sea, and also a series of film festivals throughout the country. The Russian version of Black Sea Box was launched in September 2012, and quickly applied in more than 150 schools. Drawing from EDMs experience of wetland restoration activities, two workshops on the subject were held. During 2013 Lake Baikal Day, EDM organized beach clean-up activities along the lake's shores, along with a creative writing competition featuring 200 school children. Building up to the 2014 Sochi Winter Olympics, the project collaborated with Coca-Cola, Sochi City Administration and the Sochi 2014 Organizing Committee to hold a series of events within the city during late 2013. This included a visit from United Nations Secretary General Ban Ki-moon and the Mayor of Sochi, Anatoly Pakhomov, who joined a Black Sea Box game with students aimed to promote collaboration for ecosystem protection. In 2013-2014, the H2O Environmental Film Festival was hosted in several locations throughout Russia, including Moscow, Ulan-Ude, Sochi and St Petersburg. Each event included the presentation of several environmental documentaries, lectures, photo exhibitions, creative art events and waste clean-up activities, and reach a very broad audience in Russian society.

Beginning in 2014, the 'Climate Box' was created to provide a new educational toolkit for children focused on climate change. Targeted to students aged between 9 and 12 it provides a fun and interactive way to improve their knowledge of the science behind climate change and its implications. The Climate Box has been presented to the Ministries of Environment and Education in Russia, along with Moscow City Government, Sochi City Government, and several education organisations, NGO's, teachers, and news media. After their translation into English and review by experts from the International Panel on Climate Change (IPCC), an international version of the Climate Box was presented at the COP21 in Paris in December 2015. To date, 13,500 students in Moscow and Sochi had been educated using the Climate Box, which will continue to be disseminated widely across Russia and internationally.



### Key results (phases 1-3)

- Launched the Russian version of Black Sea Box in September 2012, and distributed 754 boxes to 157 schools
- Held a three-day Black Sea Box workshop for 88 teachers from 30 schools in Sochi, Russia and three from Ukraine that piloted BSB lessons
- Held 25 ‘training of trainers’ seminars for school teachers in Sochi in partnership with the Sochi City Department of Education
- United Nations Secretary General Ban Ki-moon and Mayor of Sochi, Anatoly Pakhomov, joined a Black Sea Box game
- Arranged a H2O film festival gathering 4,000 active participants in several locations throughout Russia
- Arranged and participated in Volga, Black Sea, and Lake Baikal Day activities including workshops, clean-up events and press conferences involving over 3,300 people.
- Held public events in conjunction of the Sochi 2014 Winter Olympic Games
- Distributed 1,400 Climate Boxes to 141 schools in Moscow and Sochi used in lessons provided to 13,350 school students
- Trained 80 teachers to use the Climate Box in their classes and schools
- Developed a free interactive Climate Box mobile application
- Directly reached over 2,000 people in project events and communications, and received wide media attention
- Presented the Climate Box at major national and international forums, such as COP 21 and the Climate Neutral Olympic Games workshops



#### EDM Multigenerational Project

**Title:** Education and advocacy for water stewardship and sustainability and Climate change, water awareness and education – Climate Box

**Implementation period:** 2012-2016

**Implementing agency:** UNDP Russia

**Location:** Russia

**Budget phase 1:** 85,000 USD  
(EDM 70,000 / Co-financing: 15,000)

**Budget phase 2:** 106 408 USD  
(EDM: 100,000 USD / Co-financing: 6,408 USD)

**Budget phase 3:** 152,000 USD  
(EDM 105,000 / Co-financing 47,000 USD)

# SRI LANKA



## At a glance:

- Number of projects: 9
- People gaining improved access to drinking water and sanitation: 36,800
- People gaining improved adaptive capacity to climate change: 7,100
- People reached by awareness activities: 101,038

### Implementing partners and contributors

UNDP Sri Lanka • Seemasahitha Namal Maliyadewa • Inter Communities Co-existence Development Organization  
Gamaneguma Janatha Samagama • Women Rural Development Society • Ministry of Environment and Renewable Sri Energy, Lanka  
Provincial Ministry of Agriculture, Agrarian Development, Minor Irrigation and Industries, Colombo  
UNDP Disaster Management Programme • Orange Pvt. Ltd. with Kaduwela Local Authority  
Central Environment Authority, Sri Lanka • Holcim Lanka/Geocycle • Help O Green • Kaduwela and Seethawakapure authorities  
Geocycle and Holcim • Orange Ltd and Singer Ltd • Expo Lanka • Derana Media



### Key project results

- In Dalukana, created a metered piped water network, connecting 145 households and providing 760 people with improved access to water and installed improved sanitation facilities for 45 households
- In the Kelani River Basin region, EDM supported government, local authorities and stakeholders to develop a Pollution Control Network, a basin action plan, and the Integrated Environment Solution Plans (IESPs).
- It further installed water storage facilities, improved waste separation and collection in the Kelani River and built waste management/biogas facilities.
- Conducted diverse environmental awareness activities reaching hundreds of thousands of people.

## Clean water and sanitation for Dalukana

The 26 year long war in Sri Lanka has resulted in many problems for communities located in the northern and eastern districts of the country. The repeated displacement of communities, a lack of livelihood opportunities, scarce community infrastructure and limited public service provisions, impede development. Working with the local community and in partnership the community based organization Seemasahitha Namal Maliyadewa Gamaneguma Janatha Samagama, the EDM project installed sanitation facilities in 45 households. A piped water network was also created, connecting 145 households to a metered water network. To ensure that the newly constructed facilities continue functioning long into the future, maintenance training sessions were held for local community members. The project arranged hygiene promotion sessions for households and trained local community leaders to conduct hygiene education programmes themselves. As a result of the construction of a sanitation facility and the hygiene training sessions, community members no longer defecate in the forest. This reduces the spread of disease, improves health and safety conditions and ultimately prevents adults from missing work and children from missing opportunities to go to school.

### Key results

- Created a metered piped water network, connecting 145 households and providing 760 people with improved access to water
- Installed improved sanitation facilities for 45 households
- Provided facility maintenance training sessions were held for local community members to ensure sustained functions of installed systems
- Educated 190 households on proper hygiene and trained local community leaders to replicate training activities
- Ended the need for and practice of open defecation in the community, reducing health and safety risks and incidence of water-borne disease



#### EDM Generation 1 Project

**Title:** Water and sanitation project in Dalukana Grama Niladhari Division

**Implementation period:** 2011-2012

**Implementing agency:** UNDP Sri Lanka

**Location:** Polonnaruwa

**Budget:** 83,472 USD (EDM: 50,000 / Co-financing: 33,472)

## SRI LANKA

### Helping communities rebuild foundations for development

The recently resettled areas of Kadadkaraichenai and Kumpurupity East were severely affected by the 2005 tsunami and the prolonged civil war and often lack basic water and sanitation facilities. Drinking water was often collected from poorly maintained dug wells, which is easily contaminated and spread water-borne disease. The EDM project, together with financial contributions from the local communities, renovated 25 dug wells and 44 toilets and improved conditions at three local schools. It also set up a block casting yard and trained local contractors on eco-friendly community infrastructure construction to capacitate and create new economic opportunities for local people. It further facilitated proper sanitation and hygiene training sessions, led by the Health and Public Health Inspectorate, for all community members and school children. The rehabilitation of the dug wells has increased the quality of drinking water being consumed. Women now spend less time collecting water, and have access to private toilets. Project partners were also able to leverage additional funding from Brandina Micro Finance Cooperation (a Bangladesh based NGO) to build more toilets in the Kumpurupity, providing communities with critical additional support beyond the EDM project.



## SRI LANKA

### Key results

- Renovated 25 dug wells and 44 toilets, serving 46 households
- Provided sanitation and hygiene training to all community members and school children
- Set up a block casting yard, enabling new economic opportunities
- Trained 30 contractors on eco-friendly community infrastructure construction
- Provided waste bins, composting units, reconditioned furniture and trees and established sanitation task forces at three schools.
- Renovated a well and overhead water storage tank at one school site



#### EDM Generation 1 Project

**Title:** Improved water and sanitation facilities in Kadadkaraichenai and Kumpurupity East villages, Trincomalee District

**Implementation period:** 2011-2012

**Implementing agency:** Trincomalee

**Location:** UNDP Sri Lanka

**Budget:** 83,472 USD

(EDM: 50,000 USD / Co-financing: 10,219)

## SRI LANKA

### Clean Kelani: Empowering communities through water

The Kelani River serves as the main source of drinking water to 5 million people, about 1 in 4 Sri Lankans. Heavy metal pollution in the Kelani River is a serious problem that impacts industrial and agricultural production, and most significantly, poses great risks to the health of those who drink it. Removing the pollutants is challenging and expensive, and prevention is complicated by poor coordination and regulation of key stakeholders, particularly from industry. This multi-generational project catalyzed action across government, the private sector and local communities to reduce pollution in the river.

In its initial phase, it provided new analysis of the priority pollution sources. Based on these results, new community based hazardous waste collection, recycling and reuse systems were created and engaged with government and private sector stakeholders to actively support water protection initiatives. Waste separation and collection facilities were built along the basin, including a new biogas plant able to convert over 4 000 kg of waste per week. It also fed directly into the national policy implementation, with communities and stakeholders engaged to support National Clean River Programme, contributing to the protection and restoration of all the water bodies of Sri Lanka.

In its second phase and third phases, focus was placed on engaging the general public and policy makers, developing public-private partnerships and delivering appropriate technologies to improve water quantity and water quality. Ultimately, this led to many concrete contributions to improve planning and water quality in the basin as well as a more enabling environment for decision makers, communities and local stakeholders to take action and improve pollution

control in the basin. Reports done in the project fed directly into the development of the Kelani River Conservation Plan and stimulated a number of additional studies and actions to be taken in the coming years throughout the region.

#### Key results (phase 1)

- Supported government, local authorities and stakeholders to develop a Pollution Control Network and create community based hazardous waste collection, recycling and reuse systems to address them
- Improved waste separation and collection in the Kelani River and built a biogas facility that converts 4,000 kg of waste into energy a week
- Disseminated educational materials to at least 40,000 people and 10,000 students
- New water storage installed to secure drinking water supply in nine schools
- Mainstreamed project activities with national policy implementation under the National Clean River Programme

#### Key results (phase 2)

- Distributed water quality testing kits to schools, educating over 3,400 school children on water science and contamination risks
- Educated 100 members of selected CBOs on water scarcity, and pollution control and management and integrate it into their work
- Engaged 2,000 households on pollution issues and the need for appropriate waste management, leading to 100 community members volunteering in the Kelani River Pollution Control network



## SRI LANKA

- Initiated four community awareness involving 1,000 households in three villages on waste management
- Conducted waste separation programmes in nine village districts, directly engaging 2,000 community members and school children and increasing collection, recycling and reuse of plastic waste by five tonnes per day
- Identified pollution sources within the Kelani basin's Western Province, and developed policy recommendations to reduce pollution loads
- Informed 120 large industrial businesses and 95 small scale entrepreneurs of low cost waste water treatment technologies that they could apply within their industrial processes.
- Created a database of direct and indirect pollution sources of the Western Province of the Kelani basin
- Analyzed industrial water pollution entering the Kelani River and informed national, provincial and local authorities of the Ministry of Environment
- Supported the development of a national level operationalizing mechanism of the Kelani River Basin Management and Conservation Plan for five years
- Raised awareness with local authorities on electronic waste and engaged the Central Environment Authority to support action in four areas to collect 6 tonnes of e-waste.
- Established the Kelani River Conservation network was established, with 85 members and many groups coming together to tackle pollution issues. Through the Network's work, the Kelani River Protection Network was established.
- Created new mechanisms to fund pollution prevention actions in Kelani River Basin
- Supported and provided direct inputs into the development of the Kelani River Conservation Plan.
- Raised awareness with communication materials, including a facebook page and six videos and activities during 2015 World Water Day.
- Installed a pilot biogas facility in 2015 used to process household waste within the municipality of Kaduwela. This reduces pollution reaching the water course and generates income for local authorities to feed into the national grid.
- Supplied water storage tanks to 13 selected schools to ensure sufficient water supply and pressure within the system to meet demand at all times

### Key results (phase 3)

- Supported the development of Integrated Environment Solution Plans (IESPs) for 14 local authorities, involving over 1,100 municipal and government officials, to guide local authorities on water management and pollution control.

#### EDM Multigenerational Project

**Title:** Empowering communities through water  
**Implementation period:** 2012-2015  
**Implementing agency:** Kelani River Basin, Western Sri Lanka

**Location:** UNDP Sri Lanka

**Budget Phase 1:** 205,500 USD (EDM: 100,000 / Co-financing: 105,000)

**Budget Phase 2:** 172,300 USD (EDM: 100,000 / Co-financing: 72,300)

**Budget Phase 3:** 138,715 USD (EDM: 100,000 / Co-financing: 38,715)

# TURKEY

## At a glance:

- Number of projects: 5
- People gaining improved access to drinking water and sanitation: 2,764
- People gaining improved adaptive capacity to climate change: 40,664

### Implementing partners and contributors

Aegean Association • Ankara University • Ankara University Water Management Institute • Nature Conservation Centre Cihanbeylin • Muradiye Chamber of Commerce • Muradiye Municipality  
Gölbasi Food Agriculture and Livestock Directorate • Gölbayı Chamber of Agriculture  
Ankara Special Provincial Administration • Yasama Dair Vakıf • UNDP Turkey



## Key project results

- In the Kahta region, demonstration sites piloting solutions to improve agricultural water efficiency saved of 30,000 m<sup>3</sup> of water.
- In the Muradiye region, a new rain water harvesting pool used for supplementary irrigation with storage capacity of 3,500 m<sup>3</sup> was built and directly benefits 25 farmers.
- In Akara, efficient irrigation technologies have been installed and save approximately 7,600 m<sup>3</sup> of water over the demonstration site compared to traditional irrigation methods.
- In Cihanbeyli, the demonstration of direct seeding technologies has benefitted 1,000 farmers and saved 97,000 m<sup>3</sup> of water over 306 hectares of land.



## Advancing Turkish agriculture for a new climate

The Gölbaşı, Ankara and Isparta regions of Turkey face a myriad of water challenges. Shortage of available water of adequate quality, caused by both resource scarcity and industrial and agricultural pollution, is reducing the amount of land farmers can irrigate for crop production. Groundwater, both scarce and saline, should be an unattractive alternative to depend on but is increasingly being abstracted. Climate change will make rainfall less predictable, and likely less abundant. In its first phase, this EDM project supported rural development of the region by demonstrating solutions to improve water collection, storage and irrigation systems. Rain water harvesting units, as well as drip and sprinkler irrigation systems installed in demonstration sites (8,600 m<sup>2</sup> in total area) at an educational facility, making it an effective hub for educating visiting farmers of methods to maximize the collection and efficient use of available water resources. In total, more than 90 farmers were trained in effective water management techniques and hundreds more were engaged through a series of local events. The second phase of the project expanded the demonstrations of efficient irrigation systems, automation, use of alternative energy and rainwater harvesting. This included a pilot site featuring a water powered pump, solar power system and gravity fed low pressure irrigation system used to grow high value fruit and vegetable crops. This showed the potential for large water savings, with 7,631 m<sup>3</sup> of water saved over a 0.85 hectare plot. Further training sessions introduced 550 farmers to these technologies as well as the potential applications of automated timing systems, soil moisture sensors and remotely sensed data.

Following the high levels of interests from the local communities to modernize their current practices, a much greater water savings across the region is expected in the near future.

### Key results (phase 1)

- 92 farmers and technical staff trained in agricultural water use efficiency
- Drip irrigation demonstration systems installed in 4,200 m<sup>2</sup> area for fruit and vegetable production
- Water efficiency fixtures improved water usage in 44 households
- Water harvesting systems at Ankara University were installed and upgraded.

### Key results (phase 2)

- Installed a water powered pump (WPP), solar power system and gravity fed low pressure drip irrigation systems on a demonstration site
- Achieved a water savings of 7 631,m<sup>3</sup> of water on a 0.85 hectare plot, demonstrating large potential advances in water productivity gains
- Capacitated 550 farmers on the piloted farming and irrigation systems, as well as the use of automated timing systems, soil moisture sensors and remotely sensed data.
- Engaged and presented demonstration results to 100 relevant stakeholders, including government authorities

#### EDM Multigenerational Project

**Title:** Adaptation to climate change in Turkey through rainwater harvesting and effective water use  
- Gölbaşı, Ankara and Isparta regions

**Implementation period:** 2012-2015

**Implementing agency:** Ankara University Water Management Institute

**Location:** Ankara Gölbaşı and Isparta regions

**Budget:** 173,200 USD (EDM: 120,000 / Co-financing: 53,200)

## TURKEY

### Drips and Drops: Growing smarter agriculture practices in the Gediz River Basin

The Gediz River Basin is one of the most fertile river basins in Turkey. Over the past decade, however, the river has become highly polluted. Pollution and water scarcity lead to farmers being unable to access clean water to irrigate their farmlands. The EDM project supported communities in the Muradiye region to increase rain water harvesting practices and improve access to clean water for supplementary irrigation purposes, and improve the livelihoods of local communities. It helped farmers use drip irrigation systems and constructed a rainwater harvesting pool for irrigation purposes. Improved livelihoods and economic opportunities in agriculture can have a profound effect on the region, slowing the need for people to migrate from their farms to other areas.

#### Key results

- Supported farmers to use a drip irrigation system
- Constructed a rainwater harvesting pool for irrigation purposes and provided training on their design, building, maintenance and use
- Saved and stored 3,500 m<sup>3</sup> of water during project period



#### EDM Generation 3 Project

**Title:** More rain water more river water: rainwater harvesting for the Gediz Basin

**Implementation period:** 2011-2013

**Implementing agency:** Aegean Association

**Location:** Manisa Muradiye

**Budget:** 173,200 USD

(EDM: 120,000 / Co-financing: 18,240)

## Demonstrating solutions for sustaining agriculture

Farmers of the Kahta region understand the issues of water scarcity and the problems that a changing climate will place upon them. As demands for water increases, and climate change makes supply more variable and less abundant, they must use water more efficiently to sustain agriculture in the future. The EDM project in Kahta demonstrated advanced techniques to improve irrigation performance and optimize use of organic fertilizers through a series of pilot sites and workshops with farming communities. The piloted irrigation systems achieved a water savings of 30,000 m<sup>3</sup>, which has the potential to increase savings exponentially if the technologies are taken up by others in the area. A vermicompost facility, established at the Adiyaman University Agricultural Implementation and Research Centre during the project, now serves as a training center for farmers and students to promote sustainable fertilizer use. The project also established a help desk at the Kahta Chamber of Agriculture to provide technical support, information and knowledge to the local farming community, which has already assisted more than 100 farmers.

### Key results

- Installed drip irrigation systems on four hectares of land across eleven pilot farms in the villages, which demonstrated a water saving of 30,000 m<sup>3</sup>
- Conducted workshops and consultations between local farmers with soil and irrigation experts
- Established a vermicompost facility that serves as a training center for farmers on sustainable fertilizer use
- Created a help desk at the Kahta Chamber of Agriculture to provide technical support, information and knowledge to the local farming community
- Capacitated over 500 farmers on advanced farming techniques through trainings, workshops and site visits

#### EDM Generation 3 Project

**Title:** Adapting Agriculture to Climate Change; Kahta (Adiyaman) Case for Efficient Water Management

**Implementation period:** 2014-2015

**Implementing agency:** Nature Conservation Centre

**Location:** Adiyaman, Kahta

**Budget:** 129,500 USD

(EDM: 120,000 / Co-financing: 9,500)

## TURKEY

### Catalyzing climate security in Cihanbeyli

Cihanbeyli, situated Konya Basin, is highly vulnerable to climate change. Its dry climate, low water efficiency and dependence on agricultural production poses large risks to sustaining local livelihoods and healthy ecosystems. Annual precipitation levels are less than half of Turkey's national average, and climate change has led to extended droughts that are followed by heavy rains. This results in losses to soil productivity and farmers shifting to lower value but more climate resilient crops, which ultimately leads to losses in quality of life for the local communities. The EDM project improved agricultural productivity through the demonstration of modern farming techniques and by raising community awareness of ecosystem services and the potential impacts of climate change. A 306 hectare demonstration site piloted direct seeding, manure and vermicomposting, and crop rotation techniques across 14 farms. This site achieved a water savings of 97,000 m<sup>3</sup>, reduced pollution and costs associated from chemical fertilizers and maintained soil fertility, showing the potential for great gains that could be scaled throughout the region through improved agricultural practices. The project also performed a mapping of ecosystem services and how they could be impacted under different possible climate change scenarios to generate awareness and adaptive capacity within the farming community as well as in local and national government authorities. By demonstrating the potential risks posed by climate change, and achievable solutions for more robust agricultural practices, the project contributed to more sustainable and resilient development in the region.

#### Key results

- Improved agricultural productivity through the demonstration of modern farming techniques
- Capacitated 53 farmers and saved 97,000 m<sup>3</sup> through a pilot of direct seeding techniques on a 306 hectare demonstration site
- Demonstrated manure and vermicomposting and crop rotation techniques to improve soil fertility and agricultural productivity
- Educated more than 1,000 farmers on the piloted techniques and their possible applications
- Raised awareness on value of ecosystems services and climate change risk and response strategies to over 38,000 people, including government authorities

#### EDM Generation 4 Project

**Title:** Climate resilient agriculture and water in Cihanbeyli

**Implementation period:** 2014-2015

**Implementing agency:** Nature Conservation Centre

**Location:** Cihanbeylin, Turkey

**Budget:** 130,000 USD

(EDM: 120,000 / Co-financing: 10,000)



# UKRAINE



## At a glance:

- Number of projects: 4
- People gaining improved access to drinking water and sanitation: 78,772
- People reached by awareness activities: 215,500

### Implementing partners and contributors

UNDP Ukraine • Coca-Cola Ukraine • Center for Supporting and Developing the Reforms  
Centre for Municipal and Regional Development – Resource Centre • Custodian Council of School 23, Ivano-Frankivsk City  
Vesna – Saky municipality • Brovarsky – Tulchyn municipality • Petrovskogo • Shidna-OK Novovolynsk

## Key project results

- More than 100,000 people received information about the state of water resources in Ivano-Frankivsk city, and drinking water fountains installed in schools benefit 3,500 students, teachers, and staff.
- Through 13 small grant projects, there is improved access to water for approximately 49,431 people.
- Four additional small grant projects improved sewage treatment for 841 community members and process an estimated 44,580 m<sup>3</sup> of water.

## Protecting park life

In suburban areas of Ukraine, many residents living in cottage houses are not connected to centralized water supply and sewage systems and their waste often directly pollutes the local environment. The EDM project worked with the local community in Dolyna, to clean and prevent contamination from household sewage at the neighborhood activity center Park-Misto. Located downhill from surrounding residential areas, runoff from rain and snowmelt converge at the park and contain dangerous substances from untreated sewage and household waste that pose dangers to human and ecosystem health. The project constructed a 250 m rain and snow melt drainage system to prevent polluted run-off from reaching the park and the park lake. Residents were also educated on the importance of correct waste water treatment, leading to many households installing improved treatment systems. This reduced the volume of contaminated run-off reaching the lake, improved environmental quality of the park to provide a nicer and safer space for recreation to local residents.

### Key results

- Constructed a 250 m rain and snow melt drainage system to reduce and prevent contaminated run-off from polluting Park-Misto and its lake
- Improved the environmental quality of Park Misto and reduced pollution reaching the local lake
- Educated residents on waste water treatment, leading to households installing improved treatment systems
- Generated local interest in the creation of a centralized sewage system, which could pose a sustainable solution for the community

#### EDM Generation 1 Project

**Title:** Construction of rain and melted snow water draining system in the recreational zone 'Park-Misto'

**Implementation period:** 2012-2013

**Implementing agency:** Center for Supporting and Developing Reforms

**Location:** Ivano-Frankivska Oblast, Dolyna city, Shevchenko

**Budget:** 38,806 USD (EDM: 34,060 / Co-financing: 4,746)

## UKRAINE

### A rising tide for clean water

Many of the 235,000 residents of Ivano-Frankivsk city only have access to low quality drinking water, where contamination from nitrates and other substances increase their vulnerabilities to illness disease. While many homes are able to afford water filters to address the problem, a majority have schools are able to take actions to ensure the water provided for students and teacher are safe to drink. The EDM project improved awareness among city residents on the importance of the protection and sustainable use of clean water, and also installed safe drinking water facilities in schools serving 3,500 students, teachers and staff. A wide-range of community outreach activities reached 100,000 people, informing them through a regular bulletin on local water quality issues, numerous articles in local news media, and educational materials on water saving techniques in daily activities. Sustainability contests and a comic book for children have activated in interest and action on water protection for more than 4,000 students.

#### Key results

- Raised awareness on the protection and sustainable use of clean water to more than 100,000 people in Ivano-Frankivsk city, Ukraine
- Provided clean drinking water facilities in schools serving 3,500 students, teachers and staff
- Produced regular bulletin 'Water is the Source of Life' on local water quality issues widely disseminated to city residents
- Educated 4,000 residents through a 'How to Save Water' booklet. Engaged 4,000 children in a student sustainability contest and produced a comic book to advocate water conservation among youth



#### EDM Generation 1 Project

**Title:** Promotion of people's environmental awareness in order to form a responsible attitude to water resources as a necessary condition for sustainable development of the region

**Implementation period:** 2011-2012

**Implementing agency:** Centre for Municipal and Regional Development – Resource Centre

**Location:** Ivano-Frankivsk city

**Budget:** 44,640 USD (EDM: 40,000 / Co-financing: 4,640)





## UKRAINE

### Spring cleaning: Engaging Ukrainian civil society in local water protection

Renowned for the natural beauty of its landscape, Ukraine still faces challenges to protect and provide secure clean water in its rural communities. Many places still depend on outdated water infrastructure built during the Soviet era and a majority of natural water bodies used for water supply are severely polluted. Enhancing awareness and capacity in local authorities and communities is essential to restore water quality and local prospects for robust development. This project supported a total of 14 activities across 29 municipalities to promote awareness and improve access to clean water in Ukraine. Diverse projects produced a number of creative, replicable solutions – ranging from comic books and drawing competitions to online water monitoring and micro-irrigation systems – that can be emulated by communities for positive change throughout the country.

#### Key results

- Developed and funded seven awareness and seven water access projects
- Developed an online map of spring locations with citizen monitoring information on water quality
- Piloted drip irrigation system in Lugansk municipality, which served as demonstration plot for community members
- Facilitated the rehabilitation and protection of five springs, supporting nearly 50,000 people with access to cleaner water.
- In Bolgrad, educational and communication activities engaged 15,500 local citizens.

**EDM Generation 2 Project**

**Title:** Promotion of rational water usage through community-based initiatives

**Implementation period:** 2012-2013

**Implementing agency:** UNDP Ukraine

**Location:** 29 Municipalities in Ukraine

**Budget:** 176,874 USD

(EDM: 120,000 / Co-financing: 56,874)

## UKRAINE

### Community water supplies: Getting the right treatment

The condition, operation and maintenance of much of Ukraine’s water and sanitation infrastructure requires immediate improvements as more than 40% of water is lost in the transmission network, and waste water management systems often do not function. The EDM project in Ukraine worked to improve waste water treatment through the implementation of four micro-projects in Saky, Tulchyn, and Novovolynsk municipalities. These projects worked to connect domestic households to sewage collection systems, which were then connected to municipal waste water treatment systems. It also helped form service cooperatives run by local community members to collect fees from system users to fund necessary maintenance work. As a result, 841 people have gained access to water treatment systems that prevent sewage from contaminating groundwater and drinking water supplies.

#### Key results

- Implemented four micro-projects in three municipalities to connect domestic households to sewage collection and municipal wastewater treatment systems.
- Provided 841 people with access to water treatment systems that prevent sewage from contaminating groundwater and drinking water supplies.
- Supported local community members to form service cooperatives to collect fees from system users to fund necessary maintenance work.



**EDM Generation 1 Project**  
**Title:** Every Drop Matters – Ukraine

**Implementation period:** 2013-2015  
**Implementing agency:** UNDP Ukraine  
**Location:** Saky, Tulchym, and Novovolynsk municipalities  
**Budget:** 186,842 USD  
 (EDM: 95,000 / Co-financing: 91,842)



# UNITED ARAB EMIRATES

## At a glance:

- Number of projects: 2
- People reached by awareness activities: 15,402

**Implementing partners and contributors**  
Emirates Environment Group • UNDP U.A.E.



## Key project results

- Delivered educational workshops and outreach activities on environmental sustainability for 2,000 students and their teachers in 215 schools and 64 colleges and advocated water conservation to nearly 10,000 people through community lectures, public events and social media.
- Provided tailored workshops to nearly 600 students and 100 teachers on water stewardship and climate change and engaged 125 public and business organizations to improve water management.

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## UNITED ARAB EMIRATES

### Activating agents of change for water saving in UAE

Remarkably for an arid country, per capita water use in the UAE is three times higher than the global average. While the nation's ability to provide this abundance of water through large supply infrastructure and desalinization systems is an impressive technical achievement, it is also very expensive and unsustainable. To build awareness and a culture of water saving, this multigenerational EDM project engaged the up and coming generation to lead the way as agents for change in their households and communities.

In its first phase, it developed a series of creative and effective educational programs on sustainable water and energy consumption and the impacts of climate change that engaged 2,000 students and their teachers in 215 schools and 64 colleges. It further worked to instill good water conservation practices, responsible management of energy resources and climate informed action through public campaigns and diverse activities reaching nearly 10,000 people with civil society, decision makers, as well as the public and private sectors, including 200 companies. The second phase of the project built upon this momentum through a series of student (targeting young persons aged 10-22) and teacher workshops; public speaking and drawing competitions; and public events that attracted the participation of more than 100 schools and 125 organizations. As a result, hundreds of students vowed to be vocal advocates in their communities for water conservation and environmental protection, activating a commitment that will last a lifetime.

#### Key results (phase 1)

- Delivered educational workshops and outreach activities on environmental sustainability for 2,000 students and their teachers in 215 schools and 64 colleges
- Initiated student competitions on environmental public speaking and drawing
- Engaged more than 200 companies through participation in exhibitions and in-house events to promote water and environmental sustainability
- Advocated water conservation to nearly 10,000 people through community lectures, public events and social media

#### Key results (phase 2)

- Educated children to be agents for change for water conservation in their homes
- Provided tailored workshops to nearly 600 students and 100 teachers on water stewardship and climate change
- Arranged drawing and public speaking competitions with more than 900 students
- Engaged 125 public and business organizations to improve water management

#### EDM Generation 1 Project

**Title:** Adaptation to climate change through water conservation

**Implementation period:** 2011-2014

**Implementing agency:** Emirates Environment Group

**Location:** Dubai

**Budget Phase 1:** 102,000 USD (EDM: 60,000 / Co-financing: 42,000)

**Budget Phase 2:** 103,000 USD (EDM: 60,000 / Co-financing: 43,000)

# UZBEKISTAN



## At a glance:

- Number of projects: 4
- People gaining improved access to drinking water and sanitation: 5,286
- People gaining improved adaptive capacity to climate change: 338
- People reached by awareness activities: 10,745

### Implementing partners and contributors

UNDP Uzbekistan • Scientific Research Institute of Irrigation and Water Problems • Navoi Hokimiyat Samarkand Hokimiyat • Savoltepa Ravnaki Local Farmers • Karmana ISA • Pastdargom DT Khokimiyat

## Key project results

- A local water supply system was created in Kanal-Yoga village, benefiting its 786 residents and bringing them 5,737 m<sup>3</sup> of water per year.
- In the Karmana district, the demonstration of efficient irrigation and laser levelling has saved 47,565 m<sup>3</sup> of water and project findings have contributed to the development of national agricultural policy.
- In the Zarafshan River Basin region, water efficient demonstration plots save an estimated 65,700 m<sup>3</sup> of water per year compared to traditional irrigation practices.
- In the Pastdargom district, Samarkand oblast, the demonstration of water efficient irrigation solutions has saved 145,000 m<sup>3</sup> of water. A field resource centre has also been created and assists approximately 2,000 people each year by providing them with information of efficient agricultural practices.

## UZBEKISTAN

### From Pilots to Practice: Scaling solutions for safe water and sanitation

Roughly one-fifth of the rural population of Uzbekistan lack access to clean water, and in the Zarafshan River Basin region an even larger proportion of the population live without these basic services. Improving access to clean, safe drinking water in rural Uzbekistan is a critical but complex challenge. Many water supply companies in the basin have largely failed, due to ill-defined legal status, poor management, and lack of infrastructure maintenance. Most small rural villages lack capacity and resources to design and implement their own systems. EDM worked in the region to develop and demonstrate models to enable community water stewardship and improved drinking water and sanitation systems. In its first phase, 18 community leaders, including 8 women, were trained in resource mobilization, public-private partnership development and gender-sensitive rural water and sanitation management. This led to the application of new community led approaches to assess and prioritize social needs as a basis for the development of action plans to build community water supply systems. A first action taken included the mobilization of resources to improve pipe lining and install street taps.

Building upon this progress, the second phase of the project expanded and applied local solutions while building capacity in the full spectrum of relevant stakeholders in the Samarkand and Navoi region of Uzbekistan. This included community water user groups, local authorities, regional drinking water management bodies and national policy makers responsible for the implementation of the '2020 State Strategy for Safe Drinking Water Supply and Sanitation and Hygiene'. In 2013, the project provided hand-washing facilities in three rural schools,

improving access to hygiene facilities for 1,200 school children and demonstrated technologies to provide 3,000 residents with safe drinking water. The project model was scaled up in an additional 25 communities in the Samarkand and Navoi region as part of the State General Plan for providing rural water supply systems in rural communities. Local authorities and institutions responsible for water and education management, have been encouraged to scale up the projects results throughout the Zarafshan River Basin.



## UZBEKISTAN

### Key results (phase 1-2)

- Trained 18 community leaders, including 8 women in resource mobilization, public-private partnership development and gender-sensitive rural water and sanitation management.
- Access to hygiene facilities and education activities have decreased the risks related to hygiene related illnesses for 1,200 rural children
- Demonstrated different technologies in rural communities, successfully providing 3,000 residents with safe drinking water in pilot areas
- Developed an implementation plan for scaling up the project in an additional 25 villages, with detailed designs created for five selected communities
- Directly contributed to the implementation strategy of the State General Plan for providing rural water supply systems in rural communities for the Samarkand and Navoi region
- Developed guidelines for communities on rural water supply system administration to improve development, oversight and compliance with local authorities
- Provided guidance to relevant government departments on regulations for construction methods, planning and materials used in rural water supply systems
- Contributed directly to the ‘2020 State strategy for safe drinking water supply and sanitation and hygiene’
- Produced educational materials and hands-on training on water, sanitation and hygiene promotion for teachers, community leaders and regional drinking water authorities



#### EDM Multigenerational Project

**Title:** Community water stewardship to increase access to safe drinking water and sanitation services in the Zarafshan River Basin (phase 1)” and “From pilot to implementation: Rural water supply management and sanitation-hygiene practices in schools (phase 2)

**Implementation period:** 2011-2013

**Implementing agency:** UNDP Uzbekistan

**Location:** Pastdargom District, Samarkand, and Navoi Regions, Zarafshan River Basin

**Budget phase 1:** 96,337 USD (EDM: 74,970 / Co-financing: 20,467)

**Budget phase 2:** 193,520 USD (EDM: 74,998 / Co-financing: 118,722)



## UZBEKISTAN

### More monitoring making a difference

Water irrigation systems in Zarafshan River Basin region are inefficient, with water losses reaching as high as 50%. Solutions are hampered by water user associations that lack sufficient financing to maintain or upgrade existing infrastructure. This is partially due to the absence of water metering, which make fee collection and water monitoring ineffective. The EDM project worked to improve water monitoring, distribution and irrigation systems in Pastdargom district, Samarkand oblast to demonstrate model solutions that could be applied throughout the region. It created monitoring and distribution systems to oversee water distribution at the farm level, increase distribution equity and provided training to Water User Associations to operate them. Further work was done to demonstrate different irrigation systems and identify systems that are best suited to local conditions and specific applications. As well as the clear value demonstrated by the piloted systems, the new resource center and water monitoring software is helping to reduce conflicts between water users. The resource center serves as a meeting point for farmers and the WUA to discuss and solve local water resource problems.

#### Key results

- Performed extensive analysis of local conditions, including assessment of on-farm irrigation systems, water supply and demand each farm, field surveys of local land use, and the collection of historical data
- Created monitoring and distribution systems to oversee water distribution at the farm level, increase distribution equity and provided training to Water User Associations to operate them
- Constructed a 250 meter distribution canal and installed three hydroposts in pilot zone for modern farming systems to accurately monitor water distribution
- Piloted furrow irrigation systems for wheat and cotton, achieving an annual water saving of 50,000 m<sup>3</sup> over a 35 hectare plot
- Installed drip irrigation for orchard fruits and vegetables, achieving a water saving of 8,488 m<sup>3</sup>
- Implemented laser levelling of land in three farms, saving 95,000 m<sup>3</sup> over 67 hectares of land
- Created a resource center to educate and advise farmers on water efficiency and provide a forum for the Water User Association to discuss and solve local water resource problems

#### EDM Generation 3 Project

**Title:** WUA and on-farm water use efficiency increase at the climate change  
Implementation period: 2013-2014

**Implementing agency:** Scientific Research Institute of Irrigation and Water Problems

**Location:** Pastdargom District of Samarkand oblast

**Budget:** 108,347 USD

(EDM: 79,208 / Co-financing: 29,139)

## Water saving on farms

Agricultural production in the Karmana district, Navoi region, is limited by water scarcity, polluted and salinity. Modern irrigation practices could expand the potential to expand capacity to grow high value crops and sustain local development. The EDM project aimed to improve agronomic practices through the demonstration of modern technologies and crop management systems to increase water and land use efficiency. Laser land levelling, drip irrigation and improved furrow irrigation piloted on five farms achieved an estimated water saving of 47,500 m<sup>3</sup>, which represents a significant potential saving if scaled up to be implemented by the larger local agricultural community. A set of 31 water metering hydrometers were also installed within the pilot region to help improve the monitoring and equity of water distribution. Expanding upon the results and learning achieved through the pilot activities a series three manuals were prepared on water metering within WUAs and on farms; water use planning; and the application of new technology and techniques that were provided to the national government together with a strategy note and action plan for implementation.

### Key results

- Five farms throughout Karmana district were selected to pilot activities within the project. On these farms, laser land levelling, drip irrigation and improved furrow irrigation were demonstrated
- Trained water management specialists from Samarkand, Navoi, Jizzak and Bukhara regions on the adaptation of new technologies to local settings
- Demonstrate an estimated water saving of approximately 47,500 m<sup>3</sup>
- Trained 130 farmers, WUA association staff, water and agricultural specialists on applications of advanced agricultural technologies
- Enabled farmers to improve crop productivity, increasing cotton production by one ton per hectare in the pilot zone during the demonstration period

#### EDM Generation 4 Project

**Title:** “Water use efficiency in agriculture and water saving technologies at the farm level”

**Implementation period:** 2014-2015

**Implementing agency:** UNDP Uzbekistan

**Location:** Karmana district, Navoi Region

**Budget:** 183,076 USD

(EDM: 100,000 / Co-financing: 83,076)

## The EDM Global Programme was supported and only possible through the joint implementation of its projects with more than 100 implementing partners and contributors. They are listed here:

Aegean Association  
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 Bangladesh University of Engineering and Technology  
 Basak Village Community  
 Bright Hearts Volunteer Group  
 Brovarsky – Tulchyn municipality  
 Center for Integrated Urban Development  
 Central Asian Regional Environmental Centre for Central Asia  
 Central Environment Authority, Sri Lanka  
 Centre for Municipal and Regional Development – Resource Centre  
 Centre for Rural Technology  
 Committed Society for Change Nepal  
 Community of Lalitpur  
 Community of Kathmandu  
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 Dary Water User Association  
 Derana Media  
 Dhunkharka Water User Community – Balthali  
 Ditak Village  
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 Emirates Environment Group  
 Expo Lanka  
 Farmers of Kazakhstan  
 Frunzenskoye Community Administration  
 Geocycle and Holcim  
 Geocycle  
 Ghatta Owners Association  
 Gölbaı Food Agriculture and Livestock Directorate  
 Gölbaý Chamber of Agriculture  
 Help O Green  
 House of Water and Environment  
 Human Development Organization Doaba  
 Indus Earth Trust  
 Integrated Development Society Nepal  
 Integrated Rural Awareness and Development Organization  
 Inter Communities Co-existence Development Organization  
 International Center for Agricultural Research in the Dry Areas  
 Kaduwela Local Authority  
 Kanbala Balky Ltd  
 Karabak Governance  
 Karabak Water User Association  
 Karmana ISA  
 Kazakh National University  
 Korean Development Aid  
 Kurdistan Reconstruction and Development Organization  
 Land and Human to Advocate Progress  
 Land Research Centre  
 Leninskiy District Authorities  
 LLC Ovoschevod  
 LLP – Kaiser  
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 Muradiye Chamber of Commerce  
 Muradiye Municipality  
 Nature Conservation Centre  
 Navoi Hokimiyat  
 Orange Pvt. Ltd  
 Palestinian Hydrology Group for Water and Environmental Resources Development  
 Palestinian Wastewater Engineering Group  
 Pastdargom DT Khokimiyat  
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 Regional Environmental Centre for Central Asia  
 Royal Society for Conservation of Nature  
 Samarkand Hokimiyat  
 Savoltepa Ravnaki Local Farmers  
 Scientific Research Institute of Irrigation and Water Problems  
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 Society for Conservation and Protection of Environment  
 Society for Peoples' Action in Change and Equity  
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 Urban Environment Management Society  
 Water User Community – Balthali  
 Water User Community – Dhunkharka  
 Water User Community - Ladku Chanatue  
 Water User Community – Sankhu  
 Vesna  
 Volga-Akhtuba National Park Authority  
 Volgograd State Socio-pedagogical University  
 Women for Water Partnership  
 Women Rural Development Society  
 World Wildlife Fund  
 Yaama Dair Vakif  
 Yerevan Djur  
 Young Power in Social Action  
 Zhambul branch of KadVodKhoz

# EVERY DROP MATTERS

A partnership for safe water in 21 countries

Through the Every Drop Matters (EDM) global programme, Coca-Cola and United Nations Development Programme (UNDP) worked on partnership with communities around the world to identify and implement solutions to water-related challenges. This publication highlights the key achievements made across its many projects conducted during 2010-2016, providing snapshots of some impressive results across 21 countries.

