

Climate change adaptation to protect human health



UZBEKISTAN

This summary gives an overview of the aims, activities, challenges and results of the project “Climate change adaptation to protect human health” for Uzbekistan.

Project background

The “Climate change adaptation to protect human health” project is a global initiative jointly implemented by the World Health Organization (WHO) and United Nations Development Programme (UNDP). The seven pilot countries were Barbados, Bhutan, China, Fiji, Jordan, Kenya and Uzbekistan. The project was co-funded by the Global Environment Facility (GEF) Special Climate Change Fund (SCCF).

Overall project goal

The series of pilot projects aimed to “increase adaptive capacity of national health system institutions, including field practitioners, to respond to climate-sensitive health risks”.

Uzbekistan at a glance

Uzbekistan is a double land-locked country in Central Asia, between Turkmenistan in the north and Kazakhstan in the south, with a size of 447 400 km². Mid-latitude desert covers a large part of the country, with semiarid grassland in the east. The climate of Uzbekistan is subtropical and sharply continental; it is characterized by dry, long and hot summers and large day–night and winter–summer temperature variations.

Climate change and health in Uzbekistan

Climate change is projected to increase temperatures and decrease water availability across Uzbekistan.

- ▶ Uzbekistan is a water-stressed country. Water quality is poor with microbial and chemical pollution due to insufficient infrastructure to treat wastewater and purify drinking water. Bacterial pollution increases with the temperature, which is reflected by an increased number of cases of intestinal diseases during summer (e.g. bacterial dysentery increases by a factor of three). Local changes in dietary content and seasonal micronutrient deficiencies were identified in relation to droughts in the Karakalpakstan region.
- ▶ An increased burden of intestinal, cardiovascular and respiratory diseases was found to be associated with heat and heat waves.
- ▶ Dust storms have increased in Uzbekistan due to accelerated desertification, driven by water shortage, climate change and land degradation. Excessive exposure to dust constitutes a major health risk for about 5.5 million inhabitants of the country. In Karakalpakstan, for instance, the safe threshold for the concentration of total suspended particles (TSP) is exceeded by more than a factor of two.



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Objectives of the Uzbekistan project

The specific objective of the project in Uzbekistan was to pilot adaptation measures in Tashkent and Syrdarya provinces, and to increase the adaptation capacity of the health-care system (health-care facilities and medical practitioners) to cope with climate-sensitive diseases.

The main expected national benefit from this project was a reduction in the morbidity and mortality rates of acute intestinal, cardiovascular and respiratory diseases. An increased risk for these diseases was identified in relation to observed and projected climate change; for example, through heat waves.

The Ministry of Health acted as the executing agency for the project in cooperation with WHO and UNDP/GEF.

In 2012, a cooperation agreement was signed between the Ministry of Health of the Republic of Uzbekistan, the Centre of Hydrometeorological Services (UzHydromet) and the State Committee for Nature Protection (SCNP) of Uzbekistan.

Main outcomes and outputs: climate change adaptation in Uzbekistan

The three global outcomes defined for the global project on “Piloting Climate Change Adaptation to Protect Human Health” were adjusted slightly to the specific context of Uzbekistan and its identified health risks related to climate change.

Barriers/challenges to implementation of the various strategies, policies and measures

The barriers identified were as follows:

- ▶ The availability of publications on climate change and health in the Russian language were limited.
- ▶ No research had been conducted to observe the trends in weather and climate parameters linked to health, and no indicators were defined to issue early warnings for health.
- ▶ Early warning mechanisms for the health system were non-existent, implying that no health-preventive measures could be implemented. .
- ▶ The level of knowledge and skills on the relationship between climate change variability and health impacts, as well as adaptation to climate-sensitive diseases was limited among the general population and health-care system personnel. No specific training of personnel had been conducted on adaptation to climate change and preventing its adverse health impacts.
- ▶ The climate and health monitoring and surveillance systems were not organized at the right geographical and temporal scale so as to allow observations of trends and advance forecasts to direct interventions against climate-sensitive diseases.

At the outset of the project, none of the district health managers (seven respondents) considered their existing response plans to be effective in dealing with climate-sensitive diseases. All of them also considered that interagency and intersectoral barriers prevented effective responses. This perceived vulnerability considerably decreased by the end of the project.

Solutions

- ▶ Strong collaboration and cooperation were established between members of the project, the Working Group, Steering Committee and project staff.
- ▶ Awareness-raising and capacity-building activities on the links between climate change and health were implemented throughout the project period, targeting not only the health sector but also the general population.

Outcome 1

An early warning system (EWS) that provides reliable information on possible climate-sensitive health risks established

In the frame of this project, Uzbekistan implemented climate-informed prevention of risk activities in pilot regions of the country. This involved a series of steps, including setting up data collection and data flow (with both meteorological and health data), identification of associations and development of a plan. At the end of the project, health-care facilities from the pilot regions in Uzbekistan (Tashkent and Syrdarya) were able to monitor relevant climate-sensitive health outcomes (intestinal infections, respiratory and cardiovascular diseases) and report them regularly. An online early warning system (EWS) for climate-sensitive diseases and air pollution was developed in order to collect data that could be reported in a timely and reliable manner to the Ministry of Health/Sanitary Epidemiological Services (SES). A heat wave action plan was also developed with specific measures related to defined alert levels.

- ▶ A cooperation agreement was established on information-sharing of the respective flow of data between government agencies.
- ▶ The required documents were endorsed by the Ministry of Health, UzHydromet and SCNP, and were put into action.
- ▶ UzHydromet created the website of the GEF project in Uzbekistan, including the online EWS for the internal exchange of data on meteorological parameters and climate-sensitive diseases (cardiovascular, acute intestinal and respiratory diseases), and air pollution between agencies.
- ▶ A Meteorological Comfort Index was developed based on weather forecasts, including air temperature, air pressure, wind speed, relative humidity and precipitation for 10 days. This index was incorporated in the EWS.
- ▶ Climate change-induced changes in drivers of health-risks were determined.
- ▶ A geographical information system (GIS) for risk mapping was developed.
- ▶ Two pilot “information sites” in the regions of Syrdarya and Tashkent were equipped with the necessary information technology (IT) equipment, Internet access and furniture.
- ▶ These two “information sites” regularly sent data on cardiovascular, acute intestinal and respiratory diseases to the online EWS. Data were analysed regularly by the EWS.
- ▶ Researchers from the Department of Public Health and Clinical Medicine at Umeå University assisted WHO and the Ministry of Health to conduct analyses of weather and health data in Uzbekistan to determine short-time variations in health burden associated with ambient temperature.
- ▶ A heat wave action plan was developed and temperature thresholds for activation of different response levels were determined (Fig. 1). The plan was then translated into Russian.

Уровень Действия, которые необходимо предпринять	Действия, которые необходимо предпринять	Ответственные учреждения (на основе Меморандума о взаимодействии между различными партнерами)
Уровень Действия, которые необходимо предпринять	Профессиональный персонал (Организации в Межведомственных рабочих группах)	
	1. Разработать СРО на уровне здоровья, которые обеспечивают своевременную и точную информацию о потенциальных рисках для здоровья человека в связи с климатическими и метеорологическими условиями	Узгидромет, Госкомгидрометеоз, МЗ
	2. Установить пороговые значения, которые будут запускать ответные действия для разных уровней	МЗ центральный уровень с Узгидромет
	3. Разработать систему до самого низкого уровня (проектирования) для активирования Плана действий, когда порог жары был достигнут	МЗ центральный уровень с Узгидромет
	4. Повышение навыков и знаний медицинского персонала в области профилактики и заболеваний (АИЗ)	РНЦ(СПИЗ, Институт Здоровья)
	5. Обучить медицинский персонал на уровне больницы и на районном уровне о принятых мерах в случае жары	Институт Здоровья, РНЦ(СПИЗ, СМГи)
	6. Повышение осведомленности населения о мерах само-профилактики от заболеваний, обусловленных климатом и погодой, подготовка брошюр и буклетов (Госкомгидрометеоз)	Институт Здоровья, РНЦ(СПИЗ, СМГи)
	Персонал здравоохранения (МЗ)	
	7. Работа с персоналом больницы для разработки плана по подготовке к тепловой волне, (прохлаждаемые комнаты, хранение лекарств, вода и запасная вода...)	МЗ, РНЦ(СПИЗ, местные системы здравоохранения)
	8. Улучшение условий в больнице для обеспечения биологической среды (кондиционер, комнаты с потолком воздуха...)	МЗ
	9. Повышение осведомленности персонала и партнеров о жидкостях жары и снижении риска	РНЦ(СПИЗ, Институт Здоровья, СВП)
Уровень Действия, которые необходимо предпринять	Профессиональный персонал	
	1. Определить лица высокого риска в вашей зоне риска и информировать их о риске заболеваний, связанных с тепловой волной	МЗ и мед учреждения на местах (Махаллийский комитет и СВП, БОП)
	2. Медицинский персонал на уровне больницы и на районном уровне медицинских учреждений приступает к реализации мер по снижению влияния тепловой волны на здоровье, (сл. мкс)	РНЦ(СПИЗ, Госкомгидрометеоз, БОП)
	3. Персонал СМГи начинает транслировать сообщения о жаре с особым вниманием на наиболее уязвимые группы, когда приказывает РНЦ(СПИЗ)	СМГи, Местное ТВ и радио, Госкомгидрометеоз, БОП
	4. Распространение учебных материалов среди общего населения, врачей СВП, менеджеров здравоохранения, информирование рисков для здоровья, связанных с тепловой волной и профилактические меры на уровне населения	Институт Здоровья, Госкомгидрометеоз
	5. Объявление населению для того, чтобы информировать их о предстоящих мероприятиях по защите от жары, напольная о мерах профилактики	Институт Здоровья, Госкомгидрометеоз
	Медицинский персонал	
	6. Адаптация, оценка и специализированная, направленные на адаптацию, адаптационные, учебные... и, следовательно, обучение... по снижению риска от воздействия жары	Республиканские больницы, районные больницы, СВП, МЗ
	7. Убедиться, что планы на уровне больницы на своих местах и что заранее определены соответствующие сооружения как имеющие возможность за проведение мероприятий в случае жары	СМГи, республиканские больницы, районные больницы
	8. Создать прохладные места, которые можно использовать на уровне лиц МЗ, проверять наличие воды для пожилых людей	Учреждения здравоохранения районного уровня, Социальные организации
	9. Медицинский персонал осматривает материалы для распространения и для информирования, если наступит период сильной жары (дежурства, вода...)	СМГи, районные больницы, что больницы готовы принять пациентов с тепловой ударом или другими заболеваниями, связанными с высокой температурой воздуха
	10. Собрать данные о количестве пораженных людей	МЗ, Центры здоровья
Уровень Действия, которые необходимо предпринять	Профессиональный персонал	
	1. Проверить здоровье (2) и условия окружающей среды лиц высокого риска	Мед учреждения на местах Махаллийский комитет, СВП
	2. Убедиться, что хватает персонала в целях осуществления запланированных мероприятий	Учреждения здравоохранения районного уровня
	3. Убедиться в том, что ключевые общественные сообщения постоянно отправляются и что люди, подверженные риску могут получить к ним доступ	Институт Здоровья и СМГи (Госкомгидрометеоз, местное ТВ и радио, газета)
	4. Будьте в курсе прогноза погоды	РНЦ(СПИЗ обеспечивает на местах регулярный доступ на веб-сайт: Meteoamed.uz
	Медицинский персонал	
	5. Пересмотрите группы высокого риска и их устойчивость к жару, проведите оценку и, если нужно, вода, и хорошо проветриваемое помещение	Медицинский персонал районного уровня
	6. Активизируйте меры защиты для лиц:	
	1) регулярно контролировать температуру в помещениях, где находятся пациенты повышенного риска	Больницы на разных уровнях и Махаллийский комитет
	2) убедиться в наличии достаточного количества воды и льда, также наличие воды в определенных местах для наиболее уязвимых категорий больных	БОП на уровне СВП
	3) регулярно проверять пациентов повышенного риска, чтобы выявить обезвоживание, убедиться, что у них есть доступ к достаточному количеству жидкости	Персонал СВП (патронажные медсестры)
	4) поддерживать ключевых общественности общественного здравоохранения	Лица на местах
	7. Распространение питьевой воды в общественных местах	
	8. Рекомендуются использовать общественные центры, имеющие помещения с кондиционером для групп повышенного риска	
	9. Собрать данные о количестве пораженных людей	МЗ, Центры Здоровья

Fig. 1: The heat wave action plan for Uzbekistan

Outcome 2

Capacity of health-care institutions and facilities built to respond to climate-sensitive health risks, based on the information of the EWS

Under Outcome 2, the skills and knowledge of health-care personnel to cope with climate-sensitive diseases were enhanced and awareness of the population on climate-sensitive diseases was raised. Training programmes and manuals were developed for medical personnel and the population on the direct and indirect impacts of climate change on human health, and test training workshops for medical personnel carried out in the pilot provinces. Media campaigns were also organized.

To enable health services to respond to climate-related health risks, health services in the pilot regions received access to relevant and timely environmental, meteorological, and/or climate data (i.e. at least precipitation, humidity and temperature).

- ▶ Eleven round-table discussions were held in two pilot provinces for about 350 participants.
- ▶ Eight round tables were organized with the participation of about 240 activists and chairpersons of Mahalla Committees, students and faculty members of colleges, and teachers of secondary schools in Tashkent and Syrdariya Oblasts.



Fig. 2: The training programme for GPs “Health Impacts of Climate Change”

- ▶ A training programme for general practitioners (GPs) “Health Impacts of Climate Change” was developed, approved and published by the Ministry of Health of the Republic of Uzbekistan (Fig. 2).
- ▶ Community education campaigns on climate change, air pollution and health (round tables, seminars, meetings) were organized by the SCNP of Uzbekistan in four districts of the Tashkent region and four districts of the Syrdarya region. Overall, 240 participants from Mahalla Committees and colleges took part in these campaigns.
- ▶ In July 2014, trainers from the Scientific Research Institute of Sanitary, Hygiene and Occupational Diseases (SRI) and the Tashkent Institute for Continuous Education of Physicians (TICME) conducted a one-day training workshop for GPs. The workshop focused on climate change and health in the district of Ohangoran in the Tashkent region. Seven other training workshops (one day each) were organized for GPs in the districts of Baevut, Mirzobad, Saihunobad, Syrdarya, Sardoba, Gulistan and Akaltin in the Syrdarya region.
- ▶ In total, 686 GPs in Uzbekistan have been trained, which means that the GEF project covered all GPs in the two pilot regions of Tashkent and Syrdarya, and successfully completed their training on climate change and health.
- ▶ In September 2014, a “training of trainers” (ToT) seminar on “Impacts of climate change on human health” was offered to teachers of the training centres for advanced studies. Additionally, retraining of GPs was conducted.
- ▶ Representatives from Uzbekistan attended an intercountry seminar on “Early warning systems for health”, held in Shenzhen, China in 2014, as a way to strengthen intercountry sharing of experiences.

Outcome 3

Disease prevention measures piloted in areas of heightened climate change-associated health risk

Intervention plans for climate-sensitive health outcomes were implemented in the pilot regions and prevention measures applied in response to the EWS.

- ▶ Interventions of known relevance to climate-sensitive diseases were implemented at the local level, during time periods of maximum risk.
- ▶ In 2014, the Action Plan for Heat Waves was developed and thresholds for activation of different response levels were determined.
- ▶ Public health education activities and promotion on the use of disinfection for the prevention of waterborne acute intestinal diseases from contaminated water were organized during the period of maximum transmission (see below). The technical skills and knowledge of medical personnel in preventing climate-sensitive diseases were strengthened, and their capacity to raise public awareness of self-protective actions against these diseases was built.

Lessons learned

Close collaboration between the Ministry of Health and UzHydromet proved to be crucial for the success of the project.

- » Face-to-face lectures were felt to be an important element for capacity building as they promote personal interaction.
- » Capacity-building activities should aim at a very broad range of target audiences, including the general public, medical and public health professionals, and decision- and policy-makers.

Efforts to ensure sustainability of the structures and measures

- ▶ Project sustainability and dissemination, and use of project results were supported through the development and approval of regulatory documents at ministerial level.
- ▶ The Working Group was reconstituted and members from related sectors were included so as to ensure effective collaboration.

Opportunities to scale up

- ▶ Research on climate change and health is being encouraged in the area.
- ▶ Implementation of EWS is envisaged in other regions and cities of the country, in line with the pilot regions of the project.

It was recommended to develop a seminar on "Impacts of climate change on human health" and incorporate it in the 10 months' training programme of the series "Effective health care". This way, the seminar could be institutionalized.

Key products

Key products that may be of interest to other regions or countries include the following:

- ▶ Early warning system for climate-sensitive diseases and air pollution: www.meteomed.uz
- ▶ Heat Wave Action Plan (www.meteomed.uz)
- ▶ The training programme for GPs: "Health Impacts of Climate Change"
- ▶ Public health education and promotional materials on the use of disinfection.

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