

WATER CRISIS: SWITZERLAND – PART OF THE PROBLEM AND PART OF THE SOLUTION

EDITORIAL

The SDC has launched global programmes in the following four thematic areas: climate change, food security, water shortages, and migration-related problems in international cooperation. Aggravated by globalisation, these challenges reach beyond political boundaries and affect the entire planet, calling for concerted solutions at the international level. The poorest countries are the most vulnerable, with the risk of further undermining their potential for sustainable development and poverty reduction. The SDC needs to support their efforts to reduce the negative consequences of these global challenges and adapt to the concomitant changes. This new approach has already been endorsed by the Swiss parliament in its message on international cooperation adopted in September.

These global programmes take a new approach to cooperation, which is complementary to traditional approaches to aid, with a three-fold objective:

- to influence policies in all sectors concerned, national and international, as well as norms and standards
- to promote innovative, concerted approaches and achieve a scale effect
- to promote knowledge management and exchanges

The 2012 budget for the water, climate change, food security and migration programmes, all based on widely recognised Swiss experience and expertise, amounts to CHF 130 million.

How are the global programmes implemented? What value added do they bring to “traditional” bilateral and multilateral cooperation? What are the concrete results? These are the questions which the Global Brief will address henceforth, on a thrice yearly basis.

Happy reading!
Michel Mordasini



A mother gives her son water in the Charsarda district in Pakistan, a region strongly affected by the monsoon rains.

WATER FOOTPRINT: A BETTER WAY TO MANAGE RESOURCES

The image may be clichéd, but it is still a striking one: when you drink your daily morning cup of coffee you are actually consuming 140 litres of water. It makes no difference whether it's an espresso or a cappuccino. The real cost of the water you drink is invisible and often originates elsewhere. It takes into account how much of the precious liquid it took to grow, process, package and transport the coffee plus the amount required to process waste at each stage of production. It is what is known as the “water footprint” of a product. But the day has only just begun. If you eat a steak for lunch, calculate 15,000 litres of water per kilo of meat and if you drive to work add 400,000 litres for that.

The concept of “water footprint”, applied to the production of goods and, by extension, the activities of a person or a country, enables us to understand more clearly how we use water, by breaking it down into three components. Rainwater, classified as “green”, is distinguished from “blue”, which is water drawn from the surface or below (rivers, groundwater sources). The third category “grey” is less well known. This is the amount of freshwater required to dilute the pollutants released by production processes to return water quality to an agreed standard. Together these components make up the virtual consumption “volume” of each product and activity.

But why is it so important to know these values for a cup of coffee, a kilo of rice or an entrecôte? After all, the water cycle is a “closed” system: rain falls from the sky, replenishes the groundwater reserves, evaporates or filters into rivers which lead to the sea where the water evaporates to form clouds etc. It is the familiar diagram found in school books. But, of



Rice growing requires much water, here in Palung, Nepal.

the total mass, only 3% is freshwater and man has access to only 1% of that. It is this precious percentage point that must be well looked after. Then again, the way we exploit water has changed. To put it simply, "the amount of water is the same but more people are consuming more of it", as François Munger, Head of the SDC's "Water Initiatives" Division summed it up. Which is why it is important to have a scientific tool of analysis such as the water footprint calculation.

About one fifth of the water used on the planet comes from underground and this portion is increasing rapidly. According to the United Nations¹, due to an increase in the population and standard of living, water extraction has tripled over the last 50 years. The organisation estimates that 90% of the 3 billion inhabitants who will swell the planet's population between now and 2050 will be born in developing countries, and notably, in countries which are already experiencing water stress. More and more groundwater sources are being over-exploited and river flows are diminishing. What is more, climate change is causing increasingly irregular rainfall patterns. So the "water crisis" is not necessarily down to a global shortage but rather down to poor distribution. If we are to avoid a very real shortage, an optimisation of the planet's freshwater resources is a matter

of urgency, from a quantitative perspective as much as a qualitative one. This is just as valid for a country like Switzerland which has water in abundance: between 60 and 80% of the agricultural produce we consume is imported and could be exploiting water reserves in parts of the world where there is not enough. A [recent WWF report on Switzerland's water footprint](#) (produced in conjunction with the relevant departments of the Confederation) highlights the relationship between these two factors. "Water consumption is fundamental", specifies François Munger. "You expect agriculture to be using large quantities. But overuse, waste and pollution must be drastically reduced."

The issues of global freshwater management are a priority for the SDC. Whilst it has industry in its sights, with for example a partnership in Colombia between approximately ten companies and the government, agriculture is in the hot seat, consuming 70% of the world's water. "We have no credibility internationally unless we have projects on the ground which have big development potential and contribute real solutions" emphasises Peter Bieler, Head of the SDC's Global Food Security Programme. The SDC finances the Irrigated Rice Research Consortium ([IRRC](#)), whose aim is to develop and disseminate new techniques for rice cultivation in Asia. In particular, it promotes alternative periods of flooding and drying out of rice fields, which can reduce water use by up to 30%. Asia produces 90% of the world's rice, mostly using irrigation. Vietnam, Bangladesh and the Philippines

have already introduced this technique, occasionally rewarded by increased productivity. Numerous other Asian governments, in collaboration with the NGO's and the private sector, may also adopt it. This will enable them to optimise the management of their water resources and at the same time help stabilise agricultural production.

To promulgate the use of the water footprint as a global analysis tool, the SDC and the relevant Confederation departments support the creation of an ISO International Standard. For this complicated process they are supporting the Swiss Association for Standardisation and Quantis, a "spin-off" of the Ecole polytechnique fédérale de Lausanne which specialises in eco impact assessment (see "Three questions for ..."). Furthermore, some of the current projects with which the SDC is associated could provide the data to help create this new standard. This applies to the industrial partnership in Colombia and a current study in Vietnam. This country has become the second biggest producer and biggest exporter in the world of Robusta coffee, an extremely thirsty crop. The research, based in the Dak Lak Province which produces 40% of the national production, brings together Nestlé, water management experts, a research centre² and the Hanoi Government. Vietnam is a perfect example of water-related problems. The country's water reserves are under the combined pressure of the expansion of irrigation farming (an important source of revenue) and the improved standard of living of its town-dwelling population. The aim of establishing the water footprint of coffee farming is initially to alert the small producer majority to the need for better management of this resource. The calculation will be integrated into online software, enabling them and other partners to observe their footprint in real time. This stage will lead to a strategy which can be applied on a larger scale.

1 3rd UN World Water Development Report, 2009

2 EDE Consulting et International Water Management Institute (www.iwmi.cgiar.org)

THREE QUESTIONS TO...

Sebastien Humbert, scientific director of Quantis. With the support of SDC, Quantis develops an ISO norm designed to calculate the water footprint.

How will an ISO norm improve the calculation of the water footprint?

The ISO norm makes possible a coherent approach to the evaluation of the water footprint and establishes the general direction of this evaluation. It stresses that the water footprint takes into account the quantity and the quality of water as well as the local conditions in which this water is used. These three elements are not necessarily taken into account at the moment. The norm also stresses the importance of calculating the water footprint throughout the life cycle of the product or the company. This will help preventing the resort to solutions which merely shift the problem from one stage of the cycle

to another (for example from packaging to production).

After the Rio Summit in 1992, the United Nations adopted an approach known as Integrated Regional Water Management (IRWM). What added value does an ISO norm bring compared to this approach?

The ISO norm focuses on the calculation of the water footprint. It does not affect management at all. This norm applies upstream from management, by providing a common basis for the calculation of the footprint. This information is vital for management.

What are the main difficulties in defining and then obtaining accreditation for an ISO norm for the water footprint, and who would be interested in adopting it?

The main difficulty is achieving agreement among 100 experts represent-

ing several dozen countries, industrialists, academics and politicians, or NGO's about the concept and the scope of the norm. All this is done by consensus and takes time. However, once the consensus is found, the norm obtains high degree of international recognition. Companies wishing to increase their credibility at the environmental level already refer to the ISO 14000 series of norms in all domains. These companies, as well as those working in the field of agriculture and involved in planning or providing subsidies will be interested.



UN-WATER, A COORDINATION TOOL

Water is at the core of the United Nations' priorities, whether the issue is health, food, energy, or the environment, just to mention a few. Some 31 agencies and offices of the UN system conduct activities directly linked to water. And so it is that [UN-Water](#) was set up in 2003 in order to coordinate and facilitate the exchange of information and reinforce cooperation among the various actors, as well as with external partners, among whose number the SDC has been included since 2008.

The vocation of UN-Water is not to implement operations and campaigns – such are entrusted to its members – but rather to fulfil the following three principal tasks:

- To provide information and guiding documents to decision-makers;
- To establish a knowledge database, made available by means of regular reports and via the Internet; and
- To offer a platform for internal discussion.

UN-Water stresses the link between the availability of water and food security, and also utilizes the concept of the water footprint in its teaching and informational materials. In particular, UN-Water publishes documents on the progress made towards the achievement of the Millennium Development Goals (MDGs). Among these we find an important three-yearly report on the state, the utilization, and the management of freshwater resources in the world (the UN World Water Development Report). This report represents the result of the joint work of all of the members of UN-Water in partnership with other entities, namely, governments, international organizations, and research institutes. The most recent Report was launched in March 2012 on the eve of the [Rio+20 Summit](#).

Also published on the occasion of Rio+20 and coordinated on behalf of UN-Water by the United Nations Environment Programme (UNEP), were the results of a vast survey on the issue of integrated management of water resources, in which 130 countries participated. The results show that over 80% of these countries have undertaken reforms in the area of water management, particularly in the wake of pressure linked to increasing populations, to urbanization, and to climate change. Certain governments

reported on the positive impact exerted in the domain of water and development by the national reform measures and the implementation of integrated approaches to water resource management that had taken place since 1992 and the Rio Earth Summit. Progress, however, has been slower in terms of the effectiveness of water utilization, with less than half of the national reforms being concerned with this aspect. The results of the survey can be consulted on an interactive map accessible on the site of UN-Water.

PARTICULARLY WORTH NOTING

1

The water footprint of a product (good or service) is the volume of freshwater used across the entire production chain. It falls into three categories: "green water", i.e. rainwater; "blue water", i.e. surface water and groundwater; and finally "grey water", i.e. water used to dilute polluted water until it returns to the accepted water quality standard. The water footprint makes possible scientific analysis of the volumes of used and polluted water and their distribution in space and time.

2

Freshwater accessible for the needs of mankind amounts to just 1% of the total volume of water on the planet. Water is a vital necessity. The increase in the world's population, together with general improvements in living standards and climate change, are depleting existing reserves, making water management indispensable. The water footprint makes this possible.

3

More than 80% of Switzerland's water footprint is linked to agriculture: four-fifths of the agricultural products consumed by the Swiss are imported from regions susceptible to water shortages. Marginalised populations are the most affected. It is important for Switzerland to participate in the management of global water reserves, in particular since agriculture absorbs 70% of the world's water resources.

4

The creation of an ISO water footprint standard would help to promote general utilisation of the concept. It would be in the interest of a great many industrial and agricultural enterprises to adopt such a standard. The SDC supports the creation of an ISO standard and is conducting projects which can help in its elaboration.

5

Switzerland's international credibility in relation to dissemination of the water footprint concept is based on actual projects that offer solutions applicable on a large scale. It is in this framework that the SDC has established partnerships of an industrial nature in Columbia and in the coffee-growing sector in Vietnam. Other projects are in preparation in Peru and Chile.

CURRENT INNOVATIVE PROJECTS

(to be found on our site www.sdc.admin.ch, heading: projects/all projects)

Swiss Bluetec Bridge

This enables SMEs working in the field of drinking water to test their prototypes and business models on the spot for the benefit of the most disadvantaged.

Agri-Fin Mobile Innovations

Using mobile telephones to provide technical advice and financial services for small-scale producers in the South so that they can improve their harvests and stabilise their income.

CLIMANDES

Providing decision-makers in the Andean countries with precise climate information so that they can improve their strategies of mitigation and adaptation to climate change.

Local Migration Governance

Enabling local governments in North Africa to acquire the necessary know-how to make migration and instrument of sustainable local development.



A fisherman on the White Nile, Khartoum, Sudan. The rivers' health has a direct impact on fish stocks.

IMPRINT

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