

newsletter

NCCR North-South

Research Partnerships for Sustainable Development

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Focus on

Health and Environmental Sanitation



Searching for useable items in a wastewater canal, Abidjan, Côte d'Ivoire.
Photo: Hung Nguyen Viet

Meeting Basic Needs for Better Health

Health and dignity go hand in hand – protecting vulnerable population groups from disease is one focus of NCCR North-South research presented in this newsletter.

With the United Nations International Year of Sanitation drawing to a close, this edition of the newsletter takes a look at what was achieved to improve the situation for people in areas where even basic sanitary facilities cannot be taken for granted. One-third of the world's population is affected, and while the UN campaign has led to awareness-raising campaigns in developed countries, has it led to significant improvements? In what way can a research programme like the NCCR North-South help to contribute?

While access to sanitation is a prerequisite for better health, so too is ensuring that hard-to-reach populations such as nomads are informed about and can afford vaccines for life-threatening diseases. How to go about this most efficiently? What potential is there for human and veterinary doctors to cooperate when vaccinating nomadic populations and their animals? This newsletter presents the latest NCCR North-South research on the topic.

Editorial



Prof. Dr.
Urs Wiesmann
Director
NCCR North-South

Since the early 80s Switzerland has made considerable investments in research partnerships with developing and transition countries. Started as a unique experiment in 2001, the NCCR North-South with its different research groups has gradually established itself as one of the leading research networks worldwide.

The recent agreement expressed by the Swiss National Science Foundation and the Swiss Agency for Development and Cooperation to continue funding the NCCR North-South for another 4 years reflects the success of the programme. To ensure that achievements to date can endure, a joint doctoral programme on Global Change, Innovation and Sustainable Development was recently launched with the Universities of Bern, Zurich and Basel and its associated institutions Swiss Tropical Institute and swisspeace.

In this issue of the newsletter, examples of our health and environmental sanitation research are presented. Results show that effective approaches are no longer purely of a technical nature, but that they try to strengthen resilience while at the same reducing the vulnerability of the most affected poor population.

NCCR North-South News and Events

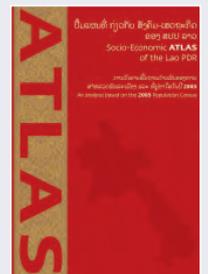
20 Years of swisspeace and CDE

Congratulations to two institutional partners, swisspeace and the Centre for Development and Environment (CDE), which both celebrated their 20th anniversary in 2008. To mark the occasion, swisspeace has published a brochure, which is available for download or to order from www.swisspeace.ch



Socio-Economic Atlas of Laos

The NCCR North-South and its Lao and international partners (e.g. IFPRI) are launching their new Socio-Economic Atlas and poverty book of Lao PDR in Vientiane, Laos, on 18 November 2008. This bilingual atlas analyses the socio-economic situation in the country and is a follow-up to the successful Socio-Economic Atlas of Vietnam. It was supported by the Swiss Agency for Development and Cooperation.



Policy Briefs

The NCCR North-South is introducing a series of policy briefs. These documents will provide research highlights from the NCCR North-South on important development issues. The policy briefs will become available available for download on the website in 2009. If you would like to order paper copies, please contact the NCCR North-South Management Centre at nccr-north-south@cde.unibe.ch



Strengthening Health Systems in West Africa

One focus of NCCR North-South activities in West Africa is on helping to contribute to a health provision system that is effective, efficient, and equitable. The programme component focuses on developing innovative and successful approaches to strengthening the health system. This is seen as a continuous process of implementation of changes in policies and management arrangements within the health sector.

The approaches to health systems strengthening within the NCCR North-South are manifold and range from assessing cost-effective ways to deliver health services and identifying efficiency gains through reorganised services delivery models, to testing and analysing optimised health service organisation through decentralised arrangements and allocating resources which address the needs of the population, especially the poor and vulnerable.



Health centre in urban Burkina Faso.
Photo: Thomas Schuppiser

For a well-functioning health system and service delivery, the availability of appropriately trained, well-deployed and motivated staff in the health sector are critical factors for delivering health interventions that will improve population health outcomes. Against this background, research activities examined the productivity of health workers at district level in Chad and elsewhere. The research analysed the relationship between productivity and various potential determinants, such as individual characteristics of workers, type of provider and urban–rural differences. It showed that productivity improvements have the potential of partly addressing human resources shortages. The research also examined incentives and disincentives for health

staff working in rural areas to identify suitable and acceptable solutions for addressing geographical imbalances.

One of the cornerstones of activities within the NCCR North-South has been in conceiving, testing and validating well adapted health service delivery to nomadic pastoralists in West Africa, notably in Chad, Mali and Mauritania. Nomadic communities live in a very close relationship to their ecosystem including their animals. This situation can favor the transmission of a multitude of diseases between humans, animals and the environment. Joint vaccination campaigns between human health and veterinary services were set up and scientifically accompanied. They demonstrated a large potential in terms of increasing vaccination coverage of vulnerable groups as well as cost-effectiveness of service delivery.

On the 27th and 28th November 2008 a symposium in Basel with the title “Health System Strengthening: Role of conditional cash incentives”, will assemble keynote speakers from the North and the South. Representatives from multilateral and bilateral agencies, large and small NGOs and the health research community will present the most recent information on current initiatives to strengthen health systems. The symposium will allow participants to learn from past experiences in countries of sub-Saharan Africa and to become acquainted with the potentials of incentive-based interventions as well as the role of research. Additional information on the symposium is available at: http://www.sti.ch/fileadmin/user_upload/Pdfs/STI_Systems_Symposium_08_1.pdf

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Combined Assessment – a New Conceptual Framework

Improving health systems, environmental sanitation and conserving natural resources for sustainable development are part of the UN's Millennium Development Goals. Since assessing ways of improving health and the environment have often been conducted in relative isolation or in non-integrative ways, two institutions within the NCCR North-South have developed a new conceptual framework in which to study this topic. The framework developed by Sandec/Eawag and the Swiss Tropical Institute uses an approach combining the assessment of various factors – health, ecological, social, economic and cultural.

The framework starts with a rapid analysis of the status of health as well as the physical, social, cultural and economic environment. This is intended to provide a basis for understanding the key issues for the improvement of health and environment in a given area. Then, three main components are assessed: health status, physical environment, and socio-economic and cultural environment. Information on each of these three components can be obtained by using standard disciplinary methods and an innovative combination of these methods, as explained below.

The analyses lead to an in-depth understanding of health, ecological and social risks while allowing critical control points (CCP) to be identified in relation to the following factors: epidemiological, ecological, socio-economic and cultural. This complements the conventional CCP approach by including an actor perspective that considers vulnerability to risk and patterns of resilience. Interventions deriving from the comprehensive analysis consider biomedical, engineering and social science perspectives or a combination of them. In this way the framework jointly addresses health and environmental sanitation improvements and the recovery and reuse of natural resources. Moreover, interventions encompass also behavioral, social and institutional changes which are



Northern Vietnam, a house with fishpond at the site of a case study. Photo: Hung Nguyen Viet

derived from the identified resilience patterns. The interventions are assessed with regards to reducing specific risk factors and vulnerability, enhancing health status and assuring equity.

NCCR North-South research is currently testing the framework in three geographically different sites of its partnership regions in Southeast Asia and West Africa.

In one example, a case study in the north of Vietnam is examining the health risks related to wastewater and excreta reuse in agriculture, using epidemiology and quantitative microbial risk assessment (QMRA). First results have shown a high rate of helminth and protozoa infection in the studied population. In the same area, the material flow analysis (MFA) method developed by a previous NCCR North-South project is being used to assess the flow of nutrients. Similarly, in Thailand and Côte d'Ivoire, health risk assessments of wastewater were conducted in Pathumthani and Abidjan. In Pathumthani, the research found that the infection risk caused by wastewater reuse for some other activities is much higher than the acceptable risk as defined by the WHO.

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NCCR North-South research on Health and Environmental Sanitation is conducted within the framework of a work package under the direction of Marcel Tanner (left) of the **Swiss Tropical Institute (STI)** in Basel, Switzerland, and Roland Schertenleib (right) of **Eawag (Swiss Federal Institute of Aquatic Science and Technology)**, in Dübendorf near Zurich, Switzerland. **Contact:** patricia.schwaerzler@unibas.ch



International Year of Sanitation – Progress and Achievements

2008 was named International Year of Sanitation (IYS) by the United Nations. By designating a year, the UN hopes to draw attention to the chosen topic. But how will raising awareness help the 2.6 billion people in need of basic sanitary facilities? Chris Zurbrügg, Director of Sandec, spoke of the importance of the International Year of Sanitation.

How important is it for your work that a year has been named International Year of Sanitation by the UN?

Very important. In the water and sanitation sector, the focus in the past has been mainly on water. One of the main problems with sanitation is that it is a taboo – people don't like talking about their own wastes and where they go.

One of the aims of the IYS is to “raise awareness” – does this ever lead to anything more concrete?

It's a first step. There have been a lot of ministerial conferences resulting in declarations that this is a priority issue. Getting the people to want and to commit to it is already one important step. It has also created a lot of activity in the sector. Not only on the ministerial and awareness level, but also on an institutional and research level. This whole discussion - especially in a group, in a global community - was very important. I would say that was one of the major achievements of this year.

To what extent can what is being done in the NCCR North-South contribute to actual improvements during such a year?

The research that we're doing in the sanitation sector is cutting-edge. We're always in discussion with the implementing agencies, the donor agencies, with the local authorities. The research we're doing corresponds to their needs. We're developing evidence which they can use in implementation. NCCR North-South research feeds right into what the people really want and need.



Chris Zurbrügg, Director of Sandec, the Department of Water and Sanitation in Developing Countries at Eawag (Swiss Federal Institute of Aquatic Science and Technology)

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Is it a matter of doing more research, or of putting the research available into use?

It's probably both. A lot of technical research has been done already. Here the question is: how can it be put into policy and practice? And understanding mechanisms and processes preventing it from being put into policy and practice. On the other hand there are issues such as behavior change. What is the driving force behind people actually wanting a toilet and not seeing the need for one – those are issues for which there is not much evidence.



Measuring the scum layer in a faecal sludge pond in Achimota, Ghana.
Photo: Eawag/Sandec

Why would people not want a toilet?

Because they don't see the benefits of having a toilet. It just costs them money. People who defecate in the open may not necessarily see a reason to change. Why shouldn't they defecate in the open? They might see some problems, but their priorities might be more on getting a good water supply or an electrical connection. So you have to start working on explaining the benefits – is it privacy, is it health? Often the health-sanitation connection is not obvious to them.

Has the best possible solution already been found for a toilet/sanitary facilities?

There are many solutions – we try to avoid saying that there is one “best” solution. Every context is different – culturally, socially, even climatically. In a place where water is very scarce, for example, it's logical that you wouldn't think about a flush system. There are very many different solutions which are more or less well established for the different contexts. The tricky thing is trying to decide or find out which solution fits which context the best. That's not just a technical issue – it's an interactive process, which we put into practice with our Household-Centred Environmental Sanitation planning approach. Together with the householders we try to establish what's possible, how much they can pay, and how this overlaps with a good technical solution that is at the same time environmentally-friendly, and also provides a health service.

The interview was conducted by Tina Hirschbuehl, Communications Officer at the NCCR North-South Management Centre.

NCCR North-South Recommended Reading



Compendium of Sanitation Systems and Technologies

Tilley E, Luethi C, Morel A, Zurbrugg C, Schertenleib R.

Swiss Federal Institute of Aquatic Science and Technology (Eawag).
Dübendorf, Switzerland. 2008. 158 pages.

A concise reference guide that systematises and summarises the most appropriate and emerging sanitation technologies. By presenting an extensive array of available options, the authors hope that this book will help promote people-centred solutions to real sanitation problems by providing information to those who are looking for alternatives to the most common offerings. The Compendium is primarily addressed at planners, engineers, development experts dealing with sanitation, NGOs and donors.

Completed PhD Theses with a Health and Environmental Sanitation Focus

A discrete-event dynamic systems approach for environmental decision support; Huang, Dongbin; China

Applying a material flow analysis model to assess river water quality pollution and mitigation potentials – A case study in the Thachin River Basin, central Thailand; Schaffner, Monika; Thailand

Material flow analysis for environmental sanitation planning in developing countries: An approach to assessing material flow with limited data availability; Montangero, Agnes; Thailand, Vietnam

Towards sustainable urban environmental sanitation in sub-Saharan Africa: An innovative planning approach for faecal sludge planning [in French]; Koanda, Halidou; Burkina Faso

"In the city, everyone is in his everyone": An anthropological study of the importance of social relationships in the case of illness in Abidjan (Côte d'Ivoire) [in French]; Bossart, Rita; Côte d'Ivoire

Human and animal health in nomadic pastoralist communities of Chad: Zoonoses, morbidity and health services
Schelling, Esther; Chad

Combining photochemical and biological processes for the treatment of potential Endocrine Disrupting Chemicals (EDC) in water: Physicochemical and engineering aspects; Kenfack, Siméon; Burkina Faso

Exclusion, vulnerability, poverty and AIDS: The role of women's organisations in a deprived urban area [in French]; Kablan N'Da, Cléopâtre; Côte d'Ivoire

Social dynamics and fertility management in deprived urban areas [in French]; Doumbia, Mohamed; Ivory Coast

"It is the palu that tires me." A study in medical anthropology of the local concepts and practices of malaria in Abidjan, Côte d'Ivoire [in French]; Granado, Stefanie; Côte d'Ivoire

The deterioration of a deprived urban community: Yopougon (Abidjan): A study of the influence of physical conditions and deficiencies in liquid and solid waste management systems [in French]; Dongo, Kouassi; Côte d'Ivoire

Molecular epidemiology of mycobacteria: Development and refinement of innovative molecular typing tools to study mycobacterial infections; Hilty, Markus; Chad, Mauritania, Ghana

The effect of irrigated urban agriculture on malaria, schistosomiasis and soil-transmitted helminthiasis in different settings of Côte d'Ivoire; Matthys, Barbara; Côte d'Ivoire

Land transformation and social change in the delta of the Senegal River: The case of the transborder zone of Pourié Thiagar (Rosso Senegal) and Mpourié (Rosso Mauritania) [in French]; Keita, Moussa; Senegal, Mauritania

In the shadow of the tents. Conceptions of illness and the health system of Tamasheq nomads in Mali; Münch, Anna; Mali
Calf mortality and parasitism in periurban livestock production in Mali; Wymann, Monica; Mali

An evaluation of sanitary risk in connection with rapid urbanization in Abidjan and lagoon pollution in the village of Azito [in French]; Koné, Brama; Côte d'Ivoire

Health, vulnerability and tuberculosis among the Sahelian nomads of Mauritania and Chad [in French]; Ould Taleb, Moustapha; Mauritania, Chad

GIS and health in urban settings: Waste-related health risks [in French]; Kientga, Mathieu; Burkina Faso

*Potentials of sludge drying beds vegetated with *Cyperus papyrus* L. and *Echinochloa pyramidalis* (Lam.) Hitchc. & Chase for faecal sludge treatment in tropical regions*; Kengne, Ives, Cameroon

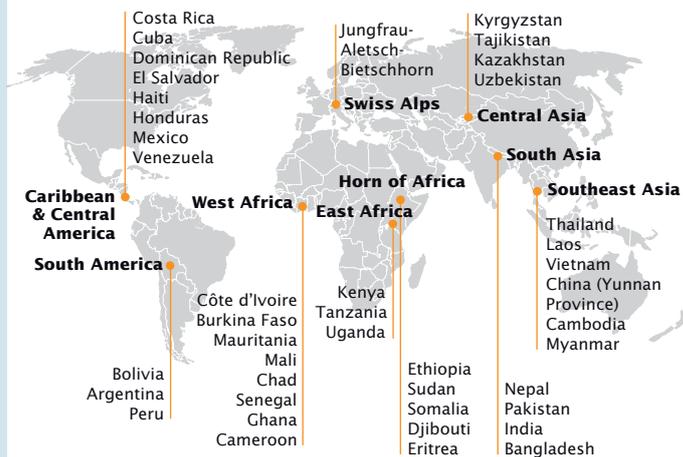
The management of healthiness in Rufisque (Senegal): Medical stakes and urban practices [in French]; Sy, Ibrahima; Senegal

Summaries of the theses are available here: <http://www.north-south.unibe.ch/content.php/publication/id/2106>

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Partnership Regions



Programme Management

- The NCCR North-South is directed by a board made up of representatives from the Swiss Partner Institutions together with the Regional Coordinators. It is headed by programme directors Hans Hurni and Urs Wiesmann, and coordinated by Thomas Breu.

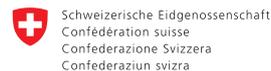
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