

# The Impact of migrant remittances on water resources in a remote rural region in Kerala, India.

## 1. Introduction

Since the beginning of the 21st century, migratory dynamics related to environmental degradation have become a burning issue, both for governments of origin and destination countries, and within the development community. Forecasts indicate a strong increase in this type of migration over the next years, with a depletion and degradation of water resources as a major cause. Besides, the high population growth rates continue to create unprecedented pressures and increase the urgency of dealing with these issues.

Approximately one-third of the world's population lives in countries facing medium to high water stress. International agency analyses indicate that by 2025, about 30% of the world's population will live in countries already experiencing water scarcity. The lack of sufficient water resources to meet domestic, agricultural, industrial and environmental demand will force people to develop additional water resources which may lead to an overexploitation and could be very detrimental for the environment and lead to increased water conflicts in the world. Rising water demand has also resulted in severe pollution in water bodies. In this context, the research project which will be presented investigates the linkage between migrants' remittances and their impact on water resources in rural areas, focusing on the Indian state of Kerala.

## 2. Rationale

So far, a number of specific studies focus on topics related to remittances spending, have indicated, that investments out of remittances have a significant impact on water resources, but no in-depth investigations are available. The research project tries to fill this gap by targeting the remittances-water nexus in rural farm households in Kerala. It analyzes how far remittances contribute to water shortages due to investments of received remittances in agriculture or other businesses (e.g. tourism sector or aquaculture).

The research area, Kerala is considered as water-rich state. However, as rain falls are bi-modal, people suffer from water shortage during the dry months of the year (about five months per annum), in spite of the state's 44 rivers and surplus rainfall during monsoon seasons. Almost 50% of the population work in the farm sector, and hence are highly dependent on freshwater resources for securing their livelihood. Land degradation and soil erosion threaten the sustainability of natural water resources in one third of the Panchayats in Kerala. Depletion of fresh water resources have caused many to seek additional income by embarking on migration-cum-remittances strategies. By far the largest shares of India's international migrants come from Kerala, and beside send back the highest amount of

remittances. Part of the remittances, in turn, is invested in facilities which improve the household's access to fresh water.

### **3. State of research**

Since the early 1990s the relation between labour migration and water resources has attracted increasing attention. At the beginning of the 21st century it gathered momentum, with a strong focus on water stress as a pushing factor of out-migration. Especially the report of the Intergovernmental Panel on Climate Change (IPCC) raised increased attention in 2007 on migration and as an impact of climate change. According to IOM (International Organization for Migration) human migration might be the greatest single impact of climate change causing millions of displaced people through shoreline erosion, coastal flooding and agricultural disruption. Estimations emanate from an increase in food and water scarcity in rural areas in South-Asia (IOM 2008). Environmental degradation as cause and consequence of migration is an important research field. IOM stated that the knowledge in this regard is still limited (IOM 2008). However, it is widely accepted that a relationship between certain environmental conditions and population movements exist (Schwartz & Notini 1994; IOM 2008; de Haas 2006). Yet, it has been overlooked that out-migration is not a one-way street regarding the impact on water resources. The research project turns to these neglected aspects. Schwartz & Notini investigated in 1994 in their preliminary study environmental degradation related to unsustainable land and water use as one of the potential root causes of certain migration from Mexico to the United States. Mexico's arable lands are affected by processes of land degradation. Desertification led to environmental and socio-economic impacts, like people abandoning degraded lands and moving to marginal lands which are even less suitable for agriculture (Schwartz & Notini 1994).

A number of case studies which concentrated on broader aspects like spending behaviour of migrants' families or impacts of remittances on rural development have revealed significant investments of remittances into irrigation facilities. Such investments might increase water consumption, but this consequence has not been dealt with. Khan (2008) showed in his research on Pakistan that 38% of migrant households used remittances to purchase irrigation facilities. Colton (1993) demonstrated the high priority which investments in the digging of increasingly deep wells and irrigation facilities have for migrants' families in Yemen for increasing their agricultural production. Migration research in rare cases shows directly that remittances contribute to increased water consumption. De Haas (2001, 2006) found out in an oasis in Morocco that remittances have a damaging impact on water resources, as migrant families invested into private motor pumps and established new farmland in formerly dry desert areas. A literature review of 84 papers conducted by Pohle & Knerr (2009) revealed that nine papers indicated investments in agriculture and four papers showed that

migrants used remittances to purchase irrigation facilities. Two papers draw the attention to direct impacts of remittances on water resources. There is evidence that the investment of remittances in irrigation facilities and agricultural land contributed to higher water consumption.

#### **4. Methodology**

The research group starts from the assumption that there is indeed significant evidence that remittances due to these conditions have a significant socio-economic and environmental impact. Information about the relation between remittances, water depletion and irrigation facilities is scattered. The data of the Migration Survey of Kerala conducted in 2007 by the Centre for Development Studies in Trivandrum and data of the Government of Kerala regarding water resources are used for first assessment of the situation.

#### **5. Perspectives**

The research group assumes that there is significant evidence that remittances have a socio-economic and environmental impact on water resources. Solutions on the level of individual smallholder household levels will have negative impacts on over all communities water supply through reduced water availability and intrusion of salt water along coastal areas. Also, the short term relief of water stress aggravates the water problems in the long run.

The results might serve as a basis to support government, national or international agencies to respond to challenges of environmental related socio-economic change due to the investment of remittances.