



Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) –
Indo-German Bilateral Project (IGBP), India

Secure Harvests through Consistent Watershed Management



A **watershed** is a topographically limited region above a certain point, from which all water flows down in a system of rivers and streams to that point. A watershed is also used as a socio-economic, political or administrative unit for managing natural resources.

Watershed management is the term used to designate the process by which the use of land and other resources in a watershed is planned and regulated, without damaging the resource base. When alternative uses and guidelines on the use are drawn up, it is not just technical parameters (hydrological, ecological and climatic factors, soil characteristics, etc.) that have to be observed. It is rather important to adapt technical solutions to the socio-economic conditions of the resource users and to take into account the – often conflicting – interests of neighbouring land-users in the upper and lower-lying parts of a watershed, and to ensure that benefits are balanced.

Hunger is widespread in India; about 350 million Indians and more than half of all children under five years of age are undernourished. Nine out of ten pregnant women suffer from malnutrition. This is despite the fact that India's granaries are full. Access to food and production resources is distributed unequally – in part, because of the social structure which is, through the caste system, organized in a rigidly hierarchical way. Other severe problems are the inappropriate management of scarce water resources and declining soil fertility. "Watershed management" comes in at this point.

Initial Situation

As in other countries, agriculture is the major consumer of water in India. While demand for food grows continuously, water resources are constantly declining. The blame for this lies with rising consumption, the pollution of water bodies, climate changes and growing competition between agriculture, industry and households. Added to this is the fact that, because of the heavy monsoon rains, large amounts of agricultural land are being lost as a result of erosion. In the watersheds, soil fertility is also often impaired as a result of inappropriate cultivation techniques.

India's government has recognized the problems and has been working on soil- and water-conserving measures for many years. Despite the investment of extensive financial resources, implementing these measures has shown limited success. The key reasons for this have been rigid and centrally established implementation guidelines that were poorly

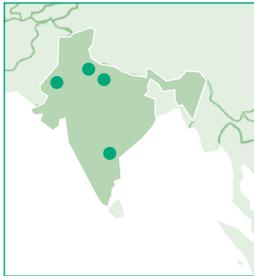
adapted to local conditions, the inadequate involvement of the local population, and the concentration on erosion-protection constructions whose operation and maintenance were not assured. Because of these failures, in 1989 the Government of India decided to cooperate with Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH in watershed management.

Project Objectives and Project Structure

At the heart of German-Indian cooperation on the rehabilitation of degraded watersheds lies the "Indo-German Bilateral Project" (IGBP), launched in 1989. The aim of the IGBP is to develop model technical innovations and social approaches for rehabilitating watersheds that can be implemented countrywide in government programmes.

The project operates on three levels. Jointly, with the population concerned, erosion-protection and water-conservation measures are developed and implemented at the local level and procedures for jointly solving technical and social problems are tested. The promotion of self-help methods and the testing of new forms of self-government play a significant part.

At the state level, the project supports a reallocation of responsibilities: government administrative units are responsible for infrastructure-related and construction measures in the watersheds; non-governmental organisations (NGOs) are involved in social mobilization and self-help activities. This new form of cooperation and division of labour is designed to increase the effectiveness of implemented measures.



India

Population: 1 065 070 607
Area: 3 287 263 km²
Languages: 16 national languages



Uttaranchal, Uttar Pradesh, Rajasthan and Andhra Pradesh, which are representative of the whole of India. Here, the target group is the rural population which uses the resources of the watersheds. More than 65 per cent of households live below the poverty line. The project has a total duration of approximately 16 years and will end in 2005.

Project Results

So far, the project has already provided evidence that food security and the supply of water can be increased substantially in small watersheds through the use of innovative technical solutions, the involvement of the population, and an appropriate division of labour between the various actors – and even remain within the framework of government budgetary targets. Environmental awareness and the ability to solve problems jointly, as well as the ability to discuss conflicts of interest have increased. Degraded agricultural areas are again being managed successfully and new sources of income (e.g. cultivation of fruit, medicinal plants) are improving the living conditions of smallholder farming families. The project has proved that it is possible to reduce soil erosion and maintain or improve soil fertility. The quality of drinking water has risen considerably, and the seasonal rural exodus of people has diminished. Significantly more children are attending school than was previously the case. Basic and advanced training and group activities are motivating people to use their knowledge and skills to develop the country together. The involvement of NGOs and the new division of labour between governmental and non-governmental actors was significant in producing these successes and has in the meantime become standard countrywide in the rehabilitation of watersheds.

Since the start in 2004, a working party of the Centre for Advanced Training in Rural Development of the Humboldt University in Berlin has been developing on Sustainet's behalf a self-evaluation method in India. Here, the aim is to record and evaluate proven development-policy measures to combat hunger. Local cooperative partners include the IGBP and Navdanya.

At the national level, the findings are fed into central guidelines and implementation orders, so that they can be used within the framework of national programmes. In order to achieve this objective, particular importance is given to careful analysis and documentation of the findings and results gathered during the course of the project. To monitor their effect, special monitoring procedures were developed. Together with a description of technical innovations and of procedures, the results are made available to government decision-makers and to a broad specialist public.

The Indian Ministry of Agriculture is responsible for the IGBP. Measures are implemented in the states by the state's agriculture and forestry administrations, in cooperation with NGOs. The project's services consist in certifying and providing technical advice to partner specialists in order to carry out measures in a participatory, technically correct, transparent and innovative manner. To a limited extent, financial support is given to self-help groups, e.g. revenue-generating activities, agricultural pilot schemes and erosion protection.

Target Group and Project Duration

The solutions tested in the project are designed to be usable throughout the country. The project operates in nine selected small watersheds in the states of



Bread for the World and Church Development Service – Navdanya, India

Food Security through Diversity



Measured in terms of its enormous species diversity, India is one of the richest countries in the world: rough estimates have indicated that there are over 81,000 different animal species and 47,000 plant species in India. However, nearly 15,000 plant species are threatened with extinction. Included among these plants are the native varieties of seed for crop plants that are highly tolerant of unfavourable environmental conditions. Many of the traditional indigenous varieties were lost in the course of the Green Revolution.

The disappearance of species has accelerated rapidly worldwide over the last few decades. The reasons for this lie particularly in the industrialisation of agriculture and the introduction of uniform, high yielding varieties. The introduction of industrialised agriculture goes hand in hand with the destruction of small-holder farming methods and ways of life, and pollution of water, air and soil.

The Convention on Biological Diversity (CBD) has existed since 1992. It was created at the World Summit in Rio de Janeiro, and has now been signed by 187 states. The CBD constitutes the first internationally binding agreement to preserve biodiversity. The signatory states commit themselves both to the protection of biodiversity in their own countries and to the sustainable use of the diversity of species in other countries. It is intended that particularly industrialised countries respect, preserve and promote wider use of the knowledge and practices of indigenous and local communities.

Initial Situation

In the last five years, 25,000 farmers have committed suicide in India. These acts of despair are caused by the high level of indebtedness through the purchase of seed and fertilizers, and the collapse in the prices of agricultural products, which was accelerated by the liberalization of global trade.

In order to secure their food, two-thirds of the Indian population are dependent on subsistence agriculture. Simply preserving species diversity and sus-

tainably managing natural resources contribute towards preserving the livelihood and thereby to the food security of present and future generations.

Project Objectives and Project Structure

The non-governmental organisation (NGO) Navdanya was founded in 1987 by the internationally known feminist and environmental activist, Vandana Shiva. (For her services, Vandana Shiva was awarded the "Alternative Nobel Prize" in 1993).

Translated, "navdanya" means "nine seeds" and represents a countrywide network of grass-roots movements. The NGO is a trust company and concerns itself primarily with seed conservation and the exchange of indigenous seed varieties by local groups and communities.

Navdanya wants to establish awareness among India's population of the risks of genetic engineering and to protect traditional knowledge, and calls for the human right to food and food sovereignty in the age of globalisation. The focus of its activities is the preservation of agricultural biodiversity. Navdanya's aim is to restore diversity in production in order to counteract globalised, centralised and homogeneous systems of production. The NGO therefore supports the introduction of organic farming methods and shows farmers ways out of the debt trap. Politically, Navdanya fights to free farmers from the claws of agro-business (catchwords: expensive pesticides, genetically modified seed, low producer prices). The NGO has also taken up the cause in the fight against bio-piracy.

Navdanya has long supported the implementation of organic farming in practice through basic and advanced training measures at various levels. The movement provides, particularly for women, organisational and financial support (e.g. in the form of microcredits or grants).

Navdanya is supported in Germany by Bread for the World and Church Development Service - An Association of the Protestant Churches in Germany.



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Navdanya cooperates closely with relief organisations in lobbying, advocacy and campaign work, at the national and international level.

Target Group

Navdanya's research and advisory work is concentrated in the northern half of India. In the south of India, Navdanya has set up a sister organisation, which is now competently implementing independent projects. Its agricultural advice is targeted at farming population groups, particularly women, who have gotten into economic difficulty as a result of the modernisation of India's agriculture. More than 60,000 farmers belong to the movement.

The movement's network is based on collaboration between regional coordinators and people in individual villages at the local level. The local groups are primarily responsible for protecting, maintaining and regenerating the diversity of varieties. In addition, the organisation focuses on consumers and their consumption behaviour. In its lobbying work, Navdanya concentrates its efforts on political decision makers at the national and international levels.

Project Results

Navdanya provides basic and advanced training courses for farmers, students, teachers, NGOs and public authorities, and for government officials. The participants receive a variety of information on sustainable land-use management. In addition, the Government of India has asked for Navdanya's support in introducing sustainable agriculture countrywide.

In the last 16 years, Navdanya has set up 20 communal seed banks in which traditional seed is preserved, described and categorized. Based on participatory analyses, the demand for selected seed is determined and the seeds are multiplied accordingly.

An agricultural research and training centre has been set up at the agricultural enterprise of Ramgarh Dehradun in Uttaranchal state. The organic production of 265 rice varieties, 20 wheat varieties, 10 barley varieties, 7 mustard varieties and of many other fruit, vegetable and medicinal plant species is carried out there. In order to preserve endangered species, Navdanya organizes their cultivation on se-



lected farms. The farmers receive the seed free of charge. This method matches traditional smallholder farming practice and ensures that knowledge about cultivation methods and experience of handling the varieties concerned is not lost. Furthermore, the varieties can undergo further appropriate breeding in the region in the long run.

The long-term preservation of the diversity of the indigenous varieties can, however, only be sustainably assured if opportunities for selling the traditional products exist. Therefore, Navdanya has introduced the first system for the direct marketing of organic farming products in India. At the Dilli Haat market in New Delhi, grain, vegetables and fruit are offered, supplemented by a catering service and a vegetable box ordering service.