CASE STUDIES: INSTITUTIONS

CASE STUDY 1: Private incentives with degraded land, Echmare, Ethiopia

The villagers of Echmare, Ethiopia voluntarily allocated degraded land to community members for the purpose of private tree planting. A small plot of wasteland, around 20m², was assigned to everyone in the community under the condition that their rights would be revoked if they did not properly manage the land.¹ The land was still communal property, but individuals were responsible for planting trees and looking after their assigned plot. Personal responsibility resulted in each tree receiving proper care, and 90% of trees survived to maturity, compared to as few as 10% surviving on similar, but communally managed, woodlots in the area. Farmers with privately managed plots were more likely than those with communal plots to plant more seedlings, water their plots more frequently, invest more time in weeding the plots, clear stones and build stone bunds around the plots.²

Since the project was started in 1992 new plots of degraded hillside land have been allocated each year and households are able to harvest mature eucalyptus worth US$5 - US$8 per tree. Each household manages approximately 100 trees on their plots, representing a substantial increase in household income as well as better access to wood for fuel and construction material.³ The success led to the local government adopting a new directive to encourage other villages to allocate unused hillsides for similar uses, including tree planting, production of forage, horticulture and bee keeping.

CASE STUDY 2: Gal Oya irrigation project, Sri Lanka

The Gal Oya irrigation project is located in a region that suffered from high levels of ethnic violence. In 1980, Sri Lanka’s Gal Oya irrigation scheme had the reputation of “the most difficult and disorganized irrigation scheme in the country.”⁴ The main reservoir was only 25% full, leading to crop failures and the fear that water conflict may arise. Experts from the University of Cornell, the United States Agency for International Development (USAID), and Colombo’s Agrarian Research and Training Institute determined that the system was faltering just as much from social as it was from physical deterioration. Water allocation suffered from a lack of transparency and

Repairing embankments in Sri Lanka. Credit, World Bank

Planting avocado trees in Ethiopia. Credit, Trees for the Future
grievances lodged about water shortages went unresolved.\textsuperscript{5}

Cooperative farmer organizations were created that would reinvigorate the channels downstream. Farmers were encouraged to become organized at the field-level into \textit{field channel groups} (FCGs) of 10 to 20 farmers per channel. These were organized at the next level up into \textit{distributary canal organizations} (DCOs), made up from representatives elected by consensus from the FCGs who received water from the same canal. Above this were \textit{area councils} for each branch canal, then a \textit{project committee} for the main Gal Oya canal, each level similarly represented by farmers chosen by consensus at each level.

Within weeks of implementing this new approach, 90\% of farmers in the pilot area covering more than 2,000 hectares were voluntarily undertaking the programme, which they had helped to develop themselves. They cleared channels, some of which had not been cleared for 15 - 20 years, rotated water deliveries so that tail enders would get a fair share, and saved water when possible to donate to farmers downstream, which involved cooperation between two ethnic groups, the upstream Sinhalese and the downstream Tamil farmers.\textsuperscript{5}

\section*{CASE STUDY 3: Social impacts of watershed regeneration in Sukhomajri, North India}

\begin{figure}[h]
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\includegraphics[width=0.4\textwidth]{sukhomajri.jpg}
\caption{Each village in India has its own area to protect. Credit, Gobar Times}
\end{figure}

A project in Sukhomajri, North India provides irrigation water from a small run-off pond in exchange for better environmental management. Landless families used the pond’s catchment area for grazing which led to soil erosion and siltation. By 1975, 65\% of the pond was filled with silt.\textsuperscript{7}

The Ford Foundation and Central Soil and Water Conservation Research and Training Institute (CSWCRTI) provided support to construct dams and establish soil conservation practices, such as planting Khair (\textit{Acacia catechu}) and Shisham (\textit{Dalbergia sissoo}) trees and building trenches. Villagers also proposed that landless families receive rights to irrigation water in exchange for eliminating grazing in that area. Forest areas were covered with grass within 10 to 15 years and grass production more than doubled in the same period from 3.82 t/ha to 7.72 t/ha. A Water Users Association was established in 1982, charged with collecting fees for water usage (Rs.16 per hour, or US$0.25) and looking after the land management practices.

Sukhomajri was the first village in India to have tax levied on the income it earns from the ecological regeneration of its degraded watershed. The village saw improvements in its economy, and as a result of better irrigation, yields of wheat increased by more than 50\% from 1977 - 1986 and from 0.68 t/ha to 1.43 t/ha between 1975 and 2008. The number of trees increased from 64 per hectare in 1980 to 415 per hectare in 1992. As the village prospered, women joined together to help each other financially. They
obtained loans from the Water Users Association at a 2% interest rate to start a business or address other needs.

However, problems arose as a result of the success of the project. As the land generated more wealth individuals from the higher-caste neighbouring village of Dhamala sought rights over the improved land, leading to prolonged struggles between farmers from Sukhomajri, Dhamala and the Forest Department. Although Sukomajri regenerated the forest, the Forest Department has refused to give more than 25% of timber generated to the community. Furthermore, the Forest Department divided the regenerated forest with Dhamala, creating a sense of injustice in Sukhomajri and heightened social tension between the villages.\footnote{Agarwal, A \& Narain, S 2000, ‘Redressing Ecological Poverty through Participatory Democracy: Case Studies from India’ Working Paper Series, no. 36, Political Economy Research Institute (PERI), University of Massachusetts, Amharst.}


\footnote{Uphoff, N \& Wijayaratna, CM 2000, Demonstrated benefits from social capital: the productivity of farmer organisations in Cal Oya, Sri Lanka World Development vol. 28, no. 11, pp. 1875-1890.}

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\footnote{The World Bank 2005, Agricultural Investment Sourcebook. The World Bank, Washington, DC.}