# Agroforestry is not rocket science but it might save DPR Korea

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There is more going on in DPR Korea than rocket science: local people in collaboration with natural resources scientists are taking control of their food supply through agroforestry. This is according to a report published in *Agroforestry Systems* journal.

## How participatory agroforestry restored land and secured the food supply

The report published online on 24 March, notes that in DPR Korea a bottom–up participatory process of developing locally appropriate agroforestry has been a revelation to many and is helping to reverse the chronic food shortages and land degradation of the 1990s.

Xu Jian Chu, lead author of the report and head of the East Asia Node of the World Agroforestry Centre, says that, "The emergence of agroforestry as a way of managing sloping land highlights how food technology innovations can take root once social and institutional constraints to land access have been reduced."

In the 1990s, DPR Korea suffered from food and energy shortages and large-scale deforestation. Triggered by a combination of the withdrawal of favourable trade conditions with the former Soviet Union and an inefficient agricultural production system, the conversion of forested sloping land to food and fuel uses was inevitable, which lead to widespread soil erosion and landslides.

Additionally, DPR Korea faces the challenge of extreme weather conditions: it experiences one or two typhoons each year leading to flash floods.

All of these conditions compromised the government's ability to supply food for rural people. Despite the government's implementation of more forest policy restrictions to reduce illegal cutting and steep slope farming, the country's forest cover reduced by 25% (from 8.20 million hectare in 1990 to 6.19 million hectare in 2005).

## Participatory approaches in agroforestry technologies

In the early 2000s, in order to reverse degradation, increase yields and generate more income from mountains and hills, the Ministry of Land and Environmental Protection introduced the Sloping Land Management project.

The project uses innovative agroforestry technologies to provide food, fodder and other products for local people while restoring degraded land. Working through partners, the project helped establish user groups, design agroforestry systems and implement agroforestry trials with monitoring and evaluation occurring at all levels.

By 2011, several hundred sloping-land user groups—made up primarily of retirees and housewives, the people who were mostly affected by the lack of access to the public food distribution system—were operating throughout the country. The user groups obtained rights-to-use, rights-to-harvest and rights-to-plan or access to sloping lands for tree products and food. All three rights were novel in DPR Korea and jointly contributed to the success of the program, together with active research support from agricultural and forestry scientists.

The user groups jointly participated with scientists in selection of

agroforestry species and design of trials. The groups implemented these trials with no financial assistance.

"We wanted the groups to continue to be self-supporting if trials proved successful. We only provided technical support on a regular basis," says Xu Jian Chu.

The results were that the tree cover on the lands controlled by the user groups increased and land productivity is now substantially higher.

"Despite these improvements, this participatory agroforestry approach had never been analysed," said Xu.

In 2011, a national workshop was finally held to look at the lessons learned from the project. During the event, participants recommended nine practices that would spread the benefits of the project throughout the nation. These included countrywide agroforestry demonstrations, innovations in double-cropping annual food crops with non-competitive foods or high timber, use of geographic information technology and agroforestry education.

Participants at the workshop concluded that the transformation of lives and landscapes through agroforestry was only possible where ecological, economic, social and institutional policies combined to support innovations.

Indeed, in DPR Korea agroforestry is now influencing policy planning through feedback from the Sloping Land Management project's trials and summaries from national workshops such as that held in 2011.

Broad support for agroforestry practices has now emerged within the Ministry of Land and Environmental Protection as well as a number of universities and research centres. Agroforestry is now increasingly

recognized in DPR Korea as a viable alternative for sloping land management. Agroforestry supports the country's priorities in environmental protection, food security and livelihoods.

The report in Agroforestry Systems recommends that, in the future, agroforestry could also be applied to certain land degradation problems on flatland cooperative farms. However, expanding successful programs will depend on the continued opening of land-use rights beyond sloping land for local people.

It is critical that information about best practices continues to reach policymakers so that they can understand the issues and create more effective policies. Further development will require increased engagement with agricultural and horticultural agencies, while the social dimensions of participatory agroforestry continue to provide rich learning.

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