

Double cropping rice-fallow systems **in** **South Asia**

Nothing grows in the dry season in vast areas of South Asia. Outside the main irrigation systems, more than 15 million hectares of land lie idle each year after the rice crop has been harvested. A new cropping system means that farmers can now grow crops in the dry season as well. This means two crops a year instead of only one, doubling production from the same bit of land.

It all begins with rice that ripens early

The new system depends on varieties of rice that ripen early. Because these varieties are quick to mature, they can be harvested earlier when the soil still holds enough moisture for a follow-on crop, such as chickpea. With the old varieties, by the time the rice had ripened the soil was too dry to grow anything. Farmers just left the land fallow until the next rainy season.

It's a very cost-effective system. Farmers plant chickpea directly into the soil after the rice has been harvested, without ploughing it first. Not only does this save time, it also conserves soil moisture and improves fertility (as the legume fixes nitrogen). Farmers soak the seed before sowing so that it germinates successfully, adding vital trace elements to the soaking water to make sure plants have the nutrients they need.

Researchers distributed varieties of early ripening rice to more than 6,000 farmers in eastern India, Nepal and Bangladesh to see if the system would work in different kinds of communities and different farming areas. The response was very encouraging. Farmers reported that because they could harvest rice early and grow a follow-on crop, they made higher profits, more than 70% in some cases.





Where are farmers double cropping now?

Work on double cropping began in the Barind, in northwest Bangladesh. Soon, farmers throughout the Barind had taken to growing chickpeas. Now, thousands of farmers in 300 villages in four districts get nearly twice as much from their land each year.

In **Nepal**, double cropping started with 57 farmer groups in four districts. They grew rice, mungbean and chickpea. It's estimated that 30,000 households are now growing another crop besides rice. Sales of grain legumes have gone up by 220% and, because families eat more legumes, their diets are better.

NGOs are enthusiastically spreading the system to 15 other districts and to the east and far west of Nepal. So far they've handed out around 22,000 information booklets to farmers. They're organising local producers to make sure there's no shortage of seed. They're also helping solve the marketing problem by starting up cooperatives to help farmers sell their produce.

In seven states in **India**, over 11,000 farmers in more than 400 villages are now double cropping. Nearly three-quarters of the farmers said that the chickpeas they grew were highly profitable and that their income had increased as a result. They used the extra money to improve their farms and educate their children. The programme was so successful that it was expanded to another 900 villages in the 2006-2007 season.

Reaching out

Getting together with extension services and NGOs was the key to getting so many farmers to start double-cropping.

For example, in India, it was a large national NGO that showed farmers what to do and put on training courses.

NGOs also come up with practical solutions to critical problems. Often farmers can't get seed. Non-staple crops like chickpeas

aren't fashionable so major seed producers aren't interested. Realising this, NGOs show farmers how to produce seed themselves and become local seed merchants. Community seed supply schemes are now thriving, particularly in Nepal and Bangladesh.

Community groups also often come to the rescue. In Nepal, village organisations got villagers together to thrash out solutions when new dry season crops were damaged by grazing animals.

Don't depend on just one crop

Farmers have a lucrative market for chickpea as demand is booming in all three countries. But, if it's grown year after year on the same land, there's a danger that pests may build up in the soil. This is a real threat in India and Bangladesh. Chickpeas are popular because they fetch good prices but other crops that grow just as well are lentils, mungbean, pigeonpea, field pea, buckwheat, horsegram and vegetables. Markets just need to be developed for these.

Where else could double cropping work?

Double cropping works well in areas where farmers can't irrigate their land and don't have many other options.

In South Asia these areas are vast - over two million hectares in Bangladesh, nearly half a million hectares in Nepal and nearly 12 million hectares in India.

For more information

For further technical information go to the RIU online database at www.researchintouse.com/database and type in **PSP35** or email riuinfo@nrint.co.uk

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