



Agriculture

Legal recognition for farmers to use, propagate and trade traditional rice varieties

Policy recommendations

1. Sri Lanka's rice requirement can be met by a combination of high yielding rice varieties and traditional rice varieties.
2. Traditional rice varieties have a huge potential in finding solutions to the environmental and ecological crises due to modern high external input rice farming.
3. Traditional rice cultivation comes with a wealth of technologies that are eco-friendly and sustainable.
4. The Sri Lankan government is advised to make accommodative amendments and provisions to the Seeds Act No 3 of 2003 to allow legal recognition for the use and propagation and trading of traditional rice varieties by Sri Lankan farmers.
5. It is essential that mainstream agricultural institutions and policy bodies develop and implement policies that support traditional agricultural knowledge and practices.



Summary

Traditional rice varieties have been conserved, developed and used by Sri Lankan farmers over a period of more than 3000 years. The technology associated with traditional rice cultivation form a body of knowledge which evolved and is time tested for its effectiveness. The mere existence of more than 2400 varieties in the 1950s in Sri Lanka explains the agro-bio diversity values of traditional rice. Hard scientific evidence exists to prove the rich nutritional values and therapeutic qualities of traditional rice varieties. A large number of traditional rice varieties have become extinct due to negligence of its importance.

Policy support is necessary for:

- Recognition of traditional rice varieties under the Seeds Act.
- Technical support to farmers in order to conserve and improve traditional rice.
- Subsidiary support to traditional rice farmers.
- Protection of community bio-cultural values of traditional rice farming through legal recognition of biocultural community protocols.



Women have become change agents and local leaders in their village

Becoming a seed banker

"Nowadays one of the most difficult things in practising traditional agriculture is lack of seeds. When I wanted to cultivate, I had to borrow from my mother. She gave me seeds with a lot of restrictions and advice. Later I thought that I should save seeds for our own use. Now I have about 50-60 varieties of seeds. The majority of them are traditional and endangered. Having a seed bank is not just a matter of building up a collection of seeds; it is like looking after a family. Seeds are my children. I give seeds to others, which is a dana (offering). This earns me great respect in the village. It also helps me to accumulate skills (karma) for the betterment of my life".

Sunitha, seed banker, Therala

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Background

Over 2400 varieties of traditional rice existed in the 1950s in Sri Lanka. Taking into consideration that Sri Lanka is a small island with diverse agro ecological zones, this number gives an indication of its relevance. Farmers preferred these varieties as they were appropriate for specific agro-ecological zones.

Cultivating traditional rice involved a highly sophisticated agricultural technology which was perfected by farmers through practice, over millennia. The traditional rice cultivation was environmentally friendly and used the nature as a great supporter for its success. Till today (2011), an estimated 8-10% of farmers still grow traditional rice varieties in full or in part of their lands. An estimated 60-70% of consumers prefer traditional grown with nature-friendly techniques over modern rice varieties grown with chemicals and fertilizers.

Traditional rice farming involves low



external inputs. It does not need chemical fertilizers, as the technology harnesses the natural forces to its maximum potential by using natural sources of fertilization such as compost.

The technology itself looked after the pests and diseases and no agro-chemicals (pesticides, herbicides etc) were necessary. Traditional water conservation practices ensured efficient use of rainwater and irrigation water. The end result is that the product is chemical free and does not have any health hazards that are accompanied with chemical farming. In addition, several traditional varieties are tested to have high nutritional values and other therapeutic values.

Traditional rice varieties are not merely cultivars. A rich cultural practice is associated with it. The farmers were

Traditional varieties deal with tsunami and climate change

The tsunami that devastated the coastal areas in 2004 also salinized a large extent of paddy lands in the Southern Sri Lanka. Paddy lands had to be abandoned and the farmers were destitute. A farmer who had a traditional rice variety named Pokkali, offered assistance to the farmers. Pokkali grew well in the salinized lands and gave an encouraging yield. All the farmers are now able to cultivate their paddy lands. Without this variety the lands would have been abandoned forever. Elsewhere in Sri Lanka, traditional rice varieties are used to re-claim salinized land. See also: <http://southasia.oneworld.net/todaysheadlines/sri-lankan-farmers-use-traditional-rice-to-beat-salinity> (8 september 2008)

self sufficient in seeds as they had efficient techniques of seed keeping and maintaining the genetic diversity in a particular area. The farmers were self sufficient in seed supplies.

Agricultural policy

Present Sri Lankan agricultural policies aim at achieving high production ignoring all hazardous effects on environment, health and natural resources such as land and water. Rice production throughout the world (especially in Asia) has undergone a dramatic transformation to increase food supply after the mid 1960's, as a result of the green revolution. Introduction of high yielding varieties, mechanization, use of inorganic fertilizer and effective agro-chemicals in controlling pest and diseases have contributed collectively to increase the rice yield in both minor and major irrigated areas. At present rice is the staple food of the nation and it contributes approximately 18% of the Gross Domestic Products (GDP).

Rice cultivation is the livelihood of more than 1.8 million farm families and more than 30 % of the country's total

labour force is directly or indirectly involved in the rice production sector. The steady increase in rice production from 2.1 million tons in 1980 to 3.04 million tons in 2003 is merely at the expense of declining forest cover, deterioration of land and water resources and aggravated health and environmental issues.

The green revolution has brought serious threats to rice agro-ecosystem as a result of expansion of paddy lands, increasing cropping intensities and increased use of inorganic fertilizer and agrochemicals. The concerns are many:

- High external inputs (chemical fertilizers and agro-chemicals) increase the cost of production.
- The rice monoculture system contributed to loss of biodiversity.
- Over 2,400 rice varieties endemic to the country have disappeared or been out of use.
- Increased cropping intensity limits the room for natural regeneration of biodiversity species.
- Widespread promotion and indiscriminate use of agro-chemicals contributes to rapid multiplication

Back to traditional varieties

"Some insects became resistant to the chemicals, and new pests emerged. Year by year we were forced to use more and more chemicals, and as the cost of chemicals were so high, we could not make any profit from the cultivation", says Mr Suduappu. The answer lay in a return to traditional rice varieties. These are more resistant to pests, and can be grown without expensive chemicals. The farmers remembered traditional pest-control techniques, such as lighting a lamp in the field to trap pests, and attracting birds that eat the insects. "Now we cultivate traditional paddy again after some 30-40 years", says Mr Suduappu. "Now I can cultivate according to my traditional system. I have the satisfaction of not killing and adherence to all the five precepts of Buddhism. And the offering we give is now without any killings. I am able to use all my traditional techniques for crop protection now."

Mr. Suduappu, a farmer from Therela, Uva province converted from chemical to traditional rice farming with support of FIOH-COMPAS 2007-2011.

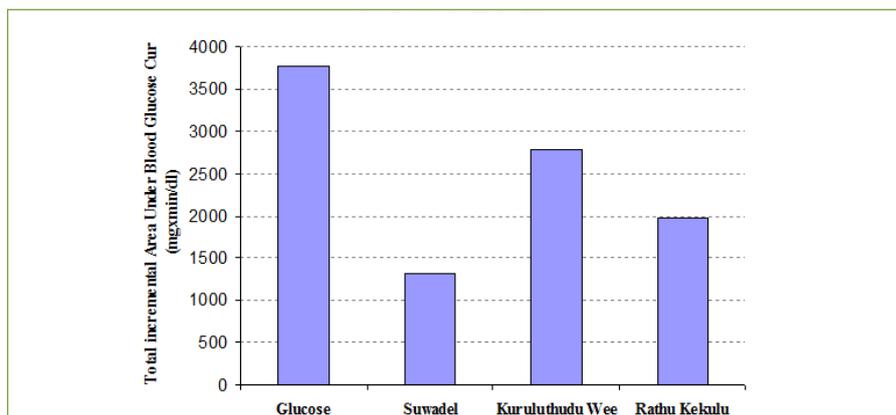
- of rice pests and diseases.
- Long term application of chemical fertilizers causes fast disappearance of organic matter content of the soil seriously affecting the physical fertility of the soil.
- Improved and hybrid varieties are unstable under climatic uncertainties and low input conditions of resource-poor farmers.
- Excessive use of agro-chemicals has caused major health hazards to the humans, specifically the farmers in dry-zone North Central province, where major irrigation schemes exist.

Research support

Two scientific studies, Bandara et al. (2008) and World Health Organization (forthcoming) explore the problems of kidney failure among people in the dry zone of North Central province and the possible link with phosphate fertilizers and weedicides. The first study states: “The overall pollution, especially with cadmium, of water, freshwater fish (the only protein-rich food source cheaply available to NCP farm families), as well as their staple rice and other food items such as milk and vegetables would be the main reason for the present Chronic Renal Failure in the North Central Province” (page 12).

Present policy on seeds

The Government of Sri Lanka pursued several policy measures to accelerate agricultural growth. These measures were aimed to increase productivity, improve international competitiveness,



Nutritional qualities superior

Traditional rice varieties have a huge potential in finding solutions to the environmental and ecological crises due to modern high external input rice farming. In order to identify the value of traditional rice varieties, a research on five traditional rice cultivars was done by Peradenya University (2008). The study concluded that the five Sri Lankan traditional rice cultivars tested are nutritionally better than common samba (new varieties) rice. Among the five cultivars, raw suwandel had the lowest Glycemic Index indicating a favorable staple that prevents diabetes. In terms of consumer preference, raw suwandel is the most preferred rice over other tested cultivars.

accommodate traditional seeds. The law has made trading traditional seeds illegal and punishable, thus discouraging the use of them. At the same time has the seed market been liberalised, allowing the multinational and private companies to produce or import seeds.

Policy gaps

These policies, Acts and plans contain many gaps in promoting traditional rice farming in Sri Lanka:

1. Policies and strategies for on-farm conservation of genetic diversity are lacking.
2. Whereas Sri Lanka has been signatory to the Convention on

for conservation and sustainable use of traditional rice varieties and land races and indigenous faunal species, pollinators and soil microorganisms is lacking.

4. Attention for indigenous knowledge aspects in agricultural research and development is lacking: insufficient attention for ethnobotany, herbal products, ethnoveterinary practices.
5. Market support and price policy emphasis for products from traditional rice and cattle farming to encourage their conservation is lacking.

Sri Lanka was a prosperous country and agriculture was environmentally friendly

and shift from low value to high value crops such as fruits and vegetables.

These policy measures covered:

- the approval of a national Seed Policy in 1996
- the enactment of the Seed Act in 2003
- the privatization of selected government seed farms
- the fertilizer subsidy program for high yielding rice varieties only.

The seed act is mainly meant for high-yielding varieties and does not

Biodiversity since 1994 and there is a National Agrobiodiversity Conservation Actionplan since 2008, there is still a lack of policies that recognize, appreciate and support farmers for their traditional knowledge related to the conservation of traditional rice varieties and other crops with high development opportunities in the face of climate change and nutrition.

3. Research emphasis and incentives



6. Concern for informal seed supply of traditional varieties to support livelihood of farming communities is absent.
7. Strategic mechanism to include traditional agriculture in the formal education system (agricultural

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- colleges as well as universities) is lacking.
8. The need of credit, crop insurance and other policy incentives for traditional on-farm conservation of agriculture is not recognized.
 9. The nutritious value of the food items derived from traditional crops and varieties and their wild relatives compared to food from other sources is not recognized.
 10. Regulations to control the spread of alien invasive weeds, which compete with and destroy many favorable plant species in rice fields, is lacking.
 11. Concern on development of resistance to chemical pesticides by pests and pathogens; and elimination of natural enemies due to indiscriminate use of chemicals is lacking.
 12. Concern for agro-biodiversity loss through monoculture agriculture is absent.

Policy recommendations

The Sri Lankan Ministry of Agriculture and Ministry of Environment should:

1. Develop policies that recognize traditional rice farming and its importance in mitigating environmental, health and resource deteriorating hazards

2. Develop institutional and legislative mechanisms to support conservation and sustainable utilization of traditional rice seeds under in situ and ex situ conditions.
3. Recognize traditional farming practices as a complementary option for increasing food security.
4. Establish a mechanism for capacity building, participation and empowerment of farmers through policy, advice, legislative measures and strengthening of farmer societies for traditional rice farming.
5. Promote research and assessments on traditional rice farming systems, conservation of traditional varieties and establish a public information dissemination system on proven benefits of traditional rice varieties.
6. Establish the Farmers' Rights for fair trading of traditional rice based products, and ensure sustenance of the traditional technology through mutual benefit sharing.
7. Establish mechanisms and funding arrangements for assisting farmers in disaster situations to restore traditional agricultural systems.

and support conversion to traditional paddy varieties. Nine well-being indicators have been used to monitor the impact of an FIOH project to reduce the use of chemicals and support conversion to traditional paddy varieties among targeted and non-targeted families (see diagram).

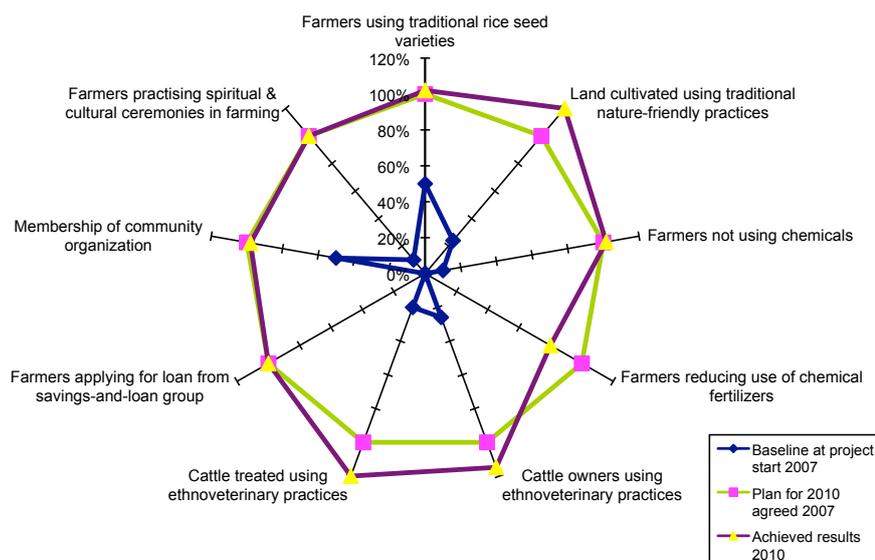
Community Protocols

As Sri Lanka is signatory to the Convention on Biodiversity (CBD), the recently adopted Nagoya Protocol (October 2010) allows communities to document their traditional knowledge in relation to genetic resources and to demand fair benefit sharing agreements. Community Protocols will be developed in Sri Lanka in 2012 with farmers organisations to support their proposal to change the 2003 Seed Act and to demand legal recognition to use, propagate and trade traditional rice varieties.

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Well-being indicators

FIOH-COMPAS supported 250 farm families in Uva province from 2007-2009 to reduce the use of chemicals



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