

Asia's Rice Culture Threatened

By [Arun Shrivastava](#)

Global Research, November 20, 2009
20 November 2009

Region: [Asia](#)

Theme: [Biotechnology and GMO](#), [Poverty & Social Inequality](#)

“Every really successful system of agriculture.....must be based on the long view, otherwise the day of reckoning is certain.” [Sir Albert Howard & Yashwant Wad; *The Waste Products of Agriculture*; 1931; page 3]

Importance of rice in Asia

Rice is Asia's staple food and pivotal to the Asian way of life, culture, customs, traditions and spirituality. 3.7 billion Asians live on rice. The main meal in the Philippines, Japan, Indonesia, Malaysia, Thailand Cambodia, China, and Korea is rice and fish. In Bangladesh, India, Nepal, and Sri Lanka a meal means rice, pulses and vegetables with some meat. Rice is cooked in 500 different ways. It is also used to produce wine, liqueur and beer.

Basically a type of grass, rice species evolved in the Gondwanaland that would later form Asia and Africa. According to Dr. Nikolai Vavilov, South and Southeast Asia [India and Burma] are the centers of domestication of rice. However, recent claims from China suggest that rice may have been domesticated about 10,000 years ago there.

Rice comes in many different colors -off white, grey, brown, red, purple and even black-and in different shapes, sizes, and aroma. There are varieties that are drought-resistant, pest-resistant, flood-resistant, and saline-resistant. Although originating from just two species - *Oryza sativa* and *Oryza glaberrima*- the diversity is the outcome of thousands of years of breeding and selection by Asian farmers. Different cultures have different preferences in matters of taste, texture, colour and stickiness. No one knows how many varieties of rice ever existed, but rice scientists believe that it could be around 140,000.

From the terraces of Asian highlands to the plains and coastal regions, it is cultivated all over Asia. In the Himalayan rain fed areas of India, Nepal, and Bhutan rice is cultivated at elevations up to 7,000 feet. A variety cultivated in a village near Manali at an elevation of over 7,000 feet is grown on natural soil moisture.

Rice has vital minerals, vitamins, energy and roughage. For this reason, from birth to death, at each stage of the life of Asians, rice has a role. In India, the first meal of an infant, after mother's milk, is a gruel made of rice given in a ceremony called 'Annaprashan.' The ceremony welcomes the baby into the society.

Rice facts and figures

In 2007, rice was grown on 156.9 million hectare worldwide of which Asia accounted for 89%. Asian farmers accounted for 91% of the world production of 651.7 million tonnes of

rice paddy. [1] The world production of rice paddy grew from 598 million MT to 651 million MT; 87% of the increase came from Asia. Production of rice went up from 542 million tonnes to 586 million tonnes. The total area under rice grew by 2.78 million hectare of which Asia accounted for over 77% in the 21st century. The yield per hectare went up from 3.96 MT to 4.21 MT and remained higher than the world average. [Table 1]

Table 1 Rice: production, area harvested and comparison of yield

2000

2001

2002

2003

2004

2005

2006

2007

Production (Million tonnes)

542.36

541.49

510.91

525.72

543.11

566.83

578.48

586.16

Area harvested (Million hectare)

137.0

135.88

131.27

131.63

132.46

135.97

138.01

139.69

Yield per hectare (Asia)

3.96

4.00

3.89

3.99

4.10

4.17

4.19

4.21

Yield per hectare (World)

3.80

3.90

3.80

3.90

4.00

4.00

4.10

4.2

Despite increase in yield and production, the per capita consumption of rice in Asia is declining: it came down from 236 grams per person per day in 1997 to 216 in 2003. This is largely due to population increase although other factors such as diversification in diet may also be responsible but rice remains the staple food.

In the main Asian rice growing region, comprising some nineteen countries, the total population is now about 3.67 billion of which 1.65 billion (45%) are engaged in agriculture. The total land area excluding water bodies is 18.42 million square kilometres of which 21% is arable land. It means that each hectare must ensure complete diet for 9.57 persons. Since Asians are not starving proves that small farmers can feed us all without spurious Green or Gene revolution.

Rice cultivation depends upon plentiful fresh water. It requires 2.34 to 3.05 cubic metres of water per kilogramme of grain yield depending upon cultivation methods. Degraded ecosystems are responsible for freshwater shortage and that is hurting rice farmers. Degradation of ecosystems is directly correlated with lop-sided developmental policies in Asia and lax Environmental Protection measures that are fully exploited by trans national corporations, often with complicity of local corrupt bureaucrats and politicians.

It is estimated that 331 million households are engaged in agriculture, of which 70%-80% [231.7 to 264.8 million] are small farmers, peasants or landless labour. They constitute the bulk of the Asian rural poor and spend around half their incomes on rice to feed their families. However, rice farming is a major source of employment for them and they grow about 80% of the world's rice. Rural women continue to play an important role in both rice cultivation and post-harvest activities. In many areas, tasks related to planting, weeding, harvesting and processing are women's domain. There is, therefore, a gender dimension to rice cultivation as well.

Events leading up to the present crisis

The Asian rice farmers today are being systematically destroyed. In many places they have either disappeared or under threat from 'economic development projects' and modern day 'mono-cropping farms.' These threats come from an unhealthy nexus of powerful cartel of multinational corporations [MNCs] and bendable Asian governments.

The agenda is to wrest control over food production from the last remaining bastion of sustainable small farms. MNCs' strategy is to take control of seeds, contaminate farmer-saved seeds, and use food as a weapon to kill people at will. The relentless destructive forces unleashed by the western food cartel through such instruments as Agreement on Agriculture, TRIPs, TRIPs Plus, and trade liberalization have been battering the Asian rice farmers for several decades and is directly responsible for farmers' distress.

At the same time the huge subsidy that the US and European Commission provide to their biggest farmers allows the food cartel backed by their respective governments to manipulate global agricultural commodity prices exactly as they want. The US Government alone provided about one billion dollar [Rs 45,000 million] subsidy to just three rice growers in the US over 1995 to 2006: \$526 million to Riceland Foods, \$314 million to Producers Rice Mill and \$146 million to Farmers Rice Cooperative. When rice is not the staple food of Americans, what could be the purpose of such huge subsidy except to disrupt traditional Asian farming households?

The Indian Government has been terrorized into genuflecting to these corporate criminals. So has been every Asian Government. If the reality is different, Asian Governments representing 3.7 billion Asians have not pledged that they shall not allow Cartel's control of food in Asia.

Asian governments erroneously believe that food production should be industrialized and surplus farmers should be deployed in industries or services. Allocation of prime agricultural lands for non-agricultural uses stems from that belief.

On the other hand, Asia's rice farmers have never been adequately compensated for growing nutrition and providing vital environmental services. Nowhere, not even in one country, although every government talks of food and nutrition security and environmental

problems as major issues for intervention. This anomaly has driven rice farming communities into a vicious cycle of low returns, debt, bankruptcy, and abject poverty.

It has been alleged that Bayer BioScience has illegally planted GM rice in India. One scientist has claimed that certain varieties in Jharkhand state are contaminated. Bayer also illegally planted rice seeds in the USA that led to contamination of US rice, export consignments were destroyed in Europe and Japan and rice exporters lost credibility internationally. Russia sought a sovereign guarantee from India that its rice is NOT CONTAMINATED with genetically modified rice. It is worth pondering what would happen if unsold American contaminated rice is dumped on Asians after this year's failure of rice crop.

Yet another threat to Asia's rice is from nano-rice. "A startling [recent study](#) reported by Georgia Miller, studying potential health impact of nano-technology, has shown that rice plants exposed to carbon fullerenes also transmit these nanomaterials to the next generation.' [2] This can cause delay in flowering by one month and reduce seed setting rate by 4.6%.

Genetic engineering of seeds, genetically modified foods and Nano foods have raised widespread concerns in Asia over food security and health. It is another matter that the Mainstream Media in Asia is maintaining an unhealthy silence.

The 3.7 billion Asian rice consumers are major stakeholders in preserving rice farmers because they need rice not Syngenta or Bayer invented rice or Monsanto invented pigs, cows, tomato, or brinjal.

Rice farmers can still reverse the decline in Asia's rice culture provided we all understand their true worth. Politicians and bureaucrats who take decisions on behalf of 3.7 billion Asians will have to seriously consider the manipulations of global food cartel and the long term impact on Asia's food security and rice culture.

Notes

1. FAO database
2. <http://www.nanowerk.com/spotlight/spotid=9516.php>

See also "[Root Uptake and Phytotoxicity of ZnO Nanoparticles](#)" and "Nanoparticles could have a negative effect on plant growth"

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