Save Our Rice

Sustaining Rice; Fighting GMOs; Ensuring safe food; Protecting Community Wisdom

Rice or paddy needs no introduction to us, Asians. Rice is food for us and no other plant has had such a deep-rooted influence on our lives. For centuries, if not from time immemorial, we in Asia have been cultivating rice, which is our food. This single crop binds India, China, Bangladesh, Philippines, Thailand, Burma, Vietnam and all other traditional 'rice-nations'.

In South India, Rice cultivation and rice-based systems have played a significant role in the lives of a very large population, influencing our language, our culture and the rural economy. Any change in the status of rice will affect all sectors of our society, directly and indirectly, as rice has become an inherent part of our life, culture and value systems. Rice is more than agriculture and commerce; rice is life for us.

End of the high-tech road

With colonization and industrialization, came 'modern' technologies. It was an essential part of the alternate cultural package imposed on us. Then came a flood of revolutions – green, white, yellow – that rocked our agriculture. With 'Green Revolution' came new saviours – High yielding varieties and hybrids, chemical fertilizers and pesticides. The cultural practices, systems and values, which naturally evolved over thousands of years, were replaced by this 'scientific' agriculture. Within a span of 50 years, our agriculture, especially rice experienced more threats and hurdles than ever. Though world food production increased, Green

Revolution caused immense loss of varieties and crops, destroyed food security at grass root levels, polluted our soil and water, shattered the social fabric of nations and made the farmer dependent on companies and bureaucracy, in every possible aspect. Along with the countless local varieties and systems, the traditional knowledge flow was disrupted, if not completely destroyed .The susceptible hybrids attracted scores of pests and diseases. To control them, tons of chemical toxins were pumped into our fields. Pesticides destroyed our ecosystems and ruined our health. Now we are standing on the cross roads of history where we find it hard to sustain agriculture as a whole and rice in particular. The huge input costs of modern agriculture, mounting debts, immense environmental destruction and also many international, national and local developments have pushed rice farmers to the edge. All roads before the rice farmer are closed and the vested interests are trying to manipulate this crisis-situation.

The looming dangers – WTO, AOA and the GMOs

Two of the impending dangers are already upon us – the WTO-Agreement on Agriculture (AOA) and Genetically Modified Organisms. Under the WTO regime, Multi-National /Trans National Corporations (MNCs / TNCs) are eager to get exclusive rights over our seeds, through Intellectual Property Rights (IPR) especially patents. IPR endangers the food sovereignty of countries and local communities, by preventing peasants from planting their own seeds and crops, using their community wisdom which ultimately threatens their existence itself.

Biotechnology is being hyped as "the" technology of this era. Biotechnology research and development is almost fully controlled by MNCs like Monsanto, Bayer Crop Science and Syngenta, which are also the world's biggest producers of agrochemicals. These are the same companies who have been selling us their toxic-pesticides and endangering lives. The Genetically Modified Organisms (GMOs – plants, animals or microbes) are the latest versions of this 'technology – mania.' Indian

government has already given permission for cultivating GM-cotton, which has proved itself to be a failure and a trap. The government machinery and our regulatory monitoring systems were a complete failure in controlling the illegal spread of GM-cotton. An average Indian may have heard of Golden Rice and Bt, which are heavily advertised under-cover through articles and news-bits in popular publications. But (s)he is not aware of its impacts (even the scientific-community do not have any clear idea regarding the nature or the magnitude of its impacts). After all, in the biotech world, it is not ethics but business that drives the 'scientific' minds. They don't care whether it destroys the earth or farmers . The Task force on Application of Biotechnology in Agriculture, headed by Dr.M.S.Swaminathan, has already submitted a heavily biased report to the Government of India, recommending the use of GM-crops and animals in the country. In a race to protect the interest of the MNCs, national leaderships are risking it all, even after it is clear that the consequences of GMOs may be devastating. The lessons we got from green revolution should not be ignored or forgotten.

The current process of Liberalization, Privatization and Globalization has bolstered and intensified the stranglehold of MNCs over our agriculture. Common Resources & projects held under public trust, are being sold to corporate interests too fast, for one to realise. Even individually owned land is being threatened by contract farming. The transfer of land rights from farmers to corporates is surely one of the objectives behind the pro-corporatisation policies of the governments. On one hand modern agriculture has left us in the midst of nowhere and on the other we are being pressured to open our markets to the highly subsidised agriculture imports from the North.

And at the end of a multitude of such technological revolutions, many unanswered, yet well perceived questions are left – where are our seeds? Where is the clean and unadulterated nature? Where has our health gone? Where are our relationships? Who shattered our community lifestyle? Where have our songs gone? Who will help us out?

Where are we standing ?

Speaking of rice we have enough reasons to frown. Rice culture is under serious threat all over Asia. For Asians, rice means everything. Asia, where rice cultivation started, produces and consumes more than 90 % of the rice in the world. (Two billion Asians get 60-70% of their energy needs from rice). Taking our case, there is no need to elaborate on what rice means to South and East India. Our culture and our lives are so dearly bound to the crop that we can't even think of getting separated from it. It is our heritage; it is our identity. Unfortunately, all the possible threats we can imagine, are making rice cultivation unsustainable. Cash crops and other high value crops are penetrating their way into the paddy fields. Big projects are destroying our paddy lands. Pro-contract farming policies of the Governments are making it impossible for the farmers from regaining control over their lives. WTO-regime & the worst of all, genetically modified seeds are being pushed into our lives.

Problems are diverse and innumerable. It varies from region to region and even district to district. Nevertheless, the question of how to sustain rice farming has emerged as a common concern for our farmers and for all of us.

Where traditional rice systems were destroyed, for example in the State of Kerala, it has shattered the social fabric of the State. Her paddy area plummeted from around 8.8 lakh hectares (in the 1970's) to about 3.1 lakh hectares (2003), turning the green state into a totally food dependant state. The destruction of the wet (paddy) lands, which were one of the major water reservoirs of the State, has led to acute water scarcity in this land of 44 rivers. Food security and sovereignty is out of question. In spite of the much-hyped developments in education and health sectors, Kerala is crumbling fast and how.

Most of the other South Indian states, West Bengal, (which tops in rice production), Chattisgarh and Orissa are bound to rice for aeons. The vast diversity of paddy systems in these parts of the world, has contributed to the brilliant cultural pattern of the region. Now it is on the verge of being destroyed. Farmers' hopes are dwindling and they are not able to survive in the changed circumstances. Suicides are increasing among farmer community and there are no serious attempts to correct this malady. Governments, over the years, have rebutted every report regarding the plight of farmers and have tried to mask them. For our cultural integrity, rural stability and ecological balance, and for the future generations, it is important that rice be sustained.The immediate need of the hour is to analyse the situation and find ways for retaining our rice-heritage.

In many parts of Asia, farmers have started realizing their problems and are trying to find solutions. They have started critically analysing the factors behind the present crisis. From Green Revolution to WTO and from gender issues to genetically modified crops, every problem is being scrutinized. There is an urge for uniting and working together for alternatives. In India also, such movements are gaining momentum. Let us strengthen this movement, come together and build relationships. It's a matter of our survival, our ecology and our future.

International year of rice – IYR 2004

The year 2004 has been declared by the United Nations General Assembly, as the International Year of Rice (IYR 2004). The IYR is endorsed and supported by 43 nations and 17 International organizations and is coordinated by the Food and Agricultural Organisation (FAO). The mission statement of IYR is

" The IYR promotes improved production and access to this vital food crop, which feeds more than half the world's population while providing income for millions of rice producers, processors and traders. Development of sustainable rice based systems will reduce hunger and poverty, and

contribute to environmental conservation and a better life for present and future generations"

The mission statement admits that the present system of rice cultivation is unsustainable. The rhetoric of the Green Revolution- period about food security and high productivity has already lost its audience. In 2004, the FAO is emphasizing on managing water resources, environmental protection and traditional rice based systems (all of which were jeopardised or destroyed by the Green Revolution), apart from the usual slogans - food security and enhancing productivity. **Before this, 1966 was also an IYR; that was the year in which the first 'miracle rice'- IR-8 was launched, which triggered the destruction of traditional farming and rural-life styles and rice in particular across Asia. Learning the fact that FAO is also pushing for the spread of GMOs, we can rightly suspect that IYR 2004 may be the inaugural ceremony for GM-rice, the latest "miracle technology".**

This international year of rice is the right occasion for the rice-societies to realise the dangerous situation in which they are in and act together, independent from the dogmas and rituals of 'modern agriculture' and also from the governmental food policies, to make it sure that rice and the cultural values related to it are sustained.

"Loss in paddy area is opportunity lost in ground water recharge too"

-Sunita Narain

Director, Centre for Science and Environment, New Delhi

Save our Rice Campaign

This campaign is an attempt to bring in and network everyone interested in sustaining rice cultivation - farmers, consumers, NGOs, students, children, teachers, leaders, policymakers, media, academicians, scientists and in a broader sense, the general public – to explore the chances of sustaining rice and rice-culture. Rice and rice-culture is not just an agricultural affair. So the whole society, whose culture and identity is linked to the rice-systems, should come together, talk, experiment and find ways to save rice from being pushed into oblivion. The campaign covers the whole of Asia, connected and coordinated by various organizations and groups. We at THANAL propose to introduce the campaign in South India, West Bengal, Orissa and Chattisgarh.

THANAL and rice campaign

Thanal is a public interest research organization based in Kerala. We have been working since 1986 on Natural History studies, conservation education, anti toxic movements, organic agriculture, zero waste and reviving traditional values and community living. We are concerned about the descending agriculture of our state and the country. Through an attempt to coordinate the " **Save Our Rice - Campaign**", we intent to reach out to like-minded people – from farmers to consumers, policy makers to media and scientists to students - in the struggle to save rice systems. We invite you all to be a part of the network and work together for sustaining rice and our future.

What all can we do ?

There are many individuals and groups who have been working on sustaining rice for a very long period. But the threat faced by rice in the country cannot be fought back by the efforts in isolation. We need to join together to stop wrong policies and biotechnology from destroying our precious rice heritage. To come together and act, we request you to,

1. Identify individuals and groups and form regional level networks. Hold local and regional level meetings to discuss, analyse and explore ways for sustaining rice and rice-farmers in your region.

2. Build up a campaign addressing various sections of the society, especially consumer groups, farmers and students on the need to sustain rice.

3. Identify and conserve paddy fields, related systems, traditional varieties and cultivation practices, traditional knowledge, culture etc. Also document the same.

4. Join the "**Save Our Rice - Campaign**" and form a part of a regional, state wide, national and international movement to conserve rice.

5. Pressure the local, state and central governments to sustain rice and rice farmers

6. Write to us about the status, concerns and scope of rice in your area, region and state. Also write to us about your work in related aspects and about your campaign. We can work together to sustain rice.

Write to us:

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A campaign by

Thanal
Self Employed Womens Association (SEWA), Kerala
Pesticide Action Network - Asia Pacific (PANAP)

Some Facts about Rice

Scientific name - *Oryza sativa* (Asian)

Orzya glaberrima (African)

Genus Oryza includes 24 accepted species, of which 22 are wild and 2 are cultivated.

Family - *Poaceae* (Graminae)

Rice belongs to the family of grasses. All our main food crops are coming from Poaceae - rice, wheat, barley, oats, maize[cereals] and bajra, sorghum, ragi, Italian millet, etc. [millets].

Centre of origin - Indo-Burma (countries including India, Bangladesh, Myanmar, Vietnam, Laos, Combodia etc..)

History

The first rice may have been grown in east and South Asia as long as 15000 years ago, when people began to settle in river delta and domesticated wild rice.

Some scientists suggest that rice was grown in China as early as 2800B.C.

The oldest rice specimen yet known in the world was obtained from Uttar Pradesh, India and is dated between 1000-750 B.C.

Status

Worlds' main staple crop, with 2.5 billion people depending on it for food. It is second only to wheat in production but supplies more energy to the world population than wheat.

- Rice is cultivated in 113 countries
- Rice is cultivated in all continents except Antarctica.
- Rice is the first cultivated crop in Asia.

Rice is grown in a wide range of geographical and climate regions.

- from northern China to Southern Australia
- from tropical rainforests of Africa to continental temperate regions in Russia.
- from arid Nile delta to mountain terraces in Philippines.
- from 2600 m above msl (Nepal) to 4m below msl in Kerala (India).

- Rice is the source of income for 100 million households in Asia and Africa.
- Rice employs 1 billion people in developing countries.
- 1 hectare of rice field can sustain 5.7 persons/year, while 1 ha wheat can sustain only 4.1 persons/year.

Rice giants

India, China, Indonesia, Bangladesh and Thailand are the 5 rice giants of the world. They produce and consume the lion share of the rice in the world. They have

- 70% of world rice area.
- 71% of the world rice production
- 45% of the world population.

Area & Production

Area		
World	-	150,938,100 ha
Asia	-	134,663,640 ha
India	-	44,000,000 ha

Rice fields cover 1.5 million square kilometres of land on earth, out of which 1.3 million square kilometres is in Asia.

- The total rice area of the world comes to about 47% of India's total geographical area.
- Asia's rice - 90% of world area and 91% of world production of rice.
- India's rice - 29% of the world area and 23% of world production of rice.
- Developing countries produce 95% of the world rice.
- Small-scale farmers in low-income countries produce 4/5th of the world's rice.

Consumption

- India, China and Indonesia together cosumes 60% of the rice produced in the world.
- Myanmar consumes 211 Kg rice/capita /year, which is the highest percapita in the world with Laos (171), Vietnam (170) and Bangladesh (168) lining up next. An Indian consumes 74kg rice /year, while in USA it is only 9 Kg.
- The percapita rice consumption of the world is 58 Kg /year.
- In Laos, rice in cultivated in 80% of its total cultivated area. Most of the produce is consumed by the producers themselves and only 10% is sold in the market.

Ecology

- Wetland rice fields are the habitat for a wide range of terrestrial and aquatic organisms.
- During 1990s, 89% of world's rice - harvested area was under water-flooded system.
- The Banawe rice terraces in the Philippines are considered one of the world's wonders and have been declared by the UNESCO as a world cultural heritage site.
- Paddy consumes more water than any other crop, but much of this water is recycled and put to other use.
- A wet-paddy farmer needs 5000 litres of water to produce 1 kilogram of rice.
- Rice is the only cereal crop that can survive long periods of submergence.

Agent Blue

- *Chemical used by the USA, as a military strategy, to destroy the Paddy fields of Vietnam (For Crop defoliation and destruction).*
- *It was used along with agent orange to destroy Vietnam.*
- *From 1962-1971, 1.2 million gallons of Agent Blue were sprayed over Vietnam rice paddies.*

Trade

- Only 4-6% of global rice production is involved in world trade. This means that the producers of rice themselves, are the major consumers.
- World trade of rice is 25 million tonnes.
- Developing countries account for 83% of total exports and 85% of total imports of rice.
- Thailand is the largest rice exporter - it accounts to nearly 26% of

the world exports. Thailand exports 7.5 million ton of rice every years. India stands second with 4 million ton, accounting to 20%.

- Indonesia is the largest importer. They buy 15.3% of the total rice in world trade. Bangladesh comes second with 6.3%.
- Malaysia is the Asian country most reliant on rice export, which account for 30% of its consumption.
- Thailand dispatches 40% of its crop to world markets.

Loss

- In 1997 around 77 million tons of rice was lost in Asia alone, during post- harvest operations. This is more than India's rice production last year (2002-2003) which is only 75.2 million tons.
- In developing countries 15-16% of the rice produced is lost during post harvest operations like threshing, transporting, drying, storage and milling.

Nutrients and Energy

- Provides 21% of the world's dietary energy supply (wheat provides 19% and maize 8%)
- In developing world, rice provides 27% of the dietary energy supply and 20% of dietary protein intake.

But for an Asian, rice holds much more importance...

- 2 billion Asians obtain 60-70% of their energy intake from rice.
- An average Bangladeshi gets 76% of his daily calorie intake and 65% of daily protein from rice.
- 21% of world's daily calorie intake is from rice.
- An average Indian gets 30% of his calorie intake from rice while it is only 3% per an American.

- Rice is rich in thiamine, riboflavin, niacin and dietary fibre. Unmilled rice contains more nutrients than milled uplifted white rice.
- Red rice loses 78% iron, 85% zinc and 70% fibre, when milled.

Hybrid Rice

- IR-8, from IRRI, is the first 'miracle-rice' to gain popularity in Asia. It was introduced in 1966; incidentally it was the first International Year of Rice.
- Vietnam is having the largest area under hybrid rice in Asia. India ranks second.

IRRI

International Rice Research Institute, Manila, Philippines

It was founded by two US multinational foundations – The Rockefeller and the Ford.

Now claims to be in control of world's largest rice germ plasm collection.

Multinational Biotech Companies

- Major players are Monsanto, Syngenta, Bayer crop science.
- Are also the major pesticide - producers in the world.
- Eyeing the multibillion dollar seed and input economy.
- Are the sole force behind pushing genetically modified (GM) crops.

Genetically Modified Rice

Rice does not normally contain Vitamin A or its precursor beta – carotene. By inserting two genes from daffodil and one gene from a bacterium, Dr Ingo Potrykus of the Swiss Federal Institute of Technology and Dr. Peter Beyer of the University of Freibury in Germany, produced **'Golden Rice'**.

Other genetically modified(GM) rice crop like iron-enhanced rice, Low-glutenin rice, Lactoferrin – producing rice etc are in the pipeline.

- Multinationals like Syngenta, Bayer, Monsanto and the World Bank are involved in golden - rice – technology propagation and advertisement.
- In GM crops, the right to keep seeds rests only with the company. Farmer has no right over the seeds.

India's GM Rice:-

India has developed 2 genetically modified rice–There were created by altering the genetic makeup of the varieties IR-64 and Pusa Basmati-1.

Genetically modifying organisms posts innumerable threats to environment, health, social relationships, economy, human rights. Using Genetically Modified Organisms (GMOs) for agricultural purposes is heavily contested around the world. European Union and many other nations have imposed heavy restrictions on the cultivation, experimentation and marketing of GM crops. Civil society, many scientists, nature-organisations and other social organisations are against GM crops. On the other side, the Multinational biotechnology companies, a group of scientists and recently FAO is advocating GM crop cultivation.

Basmati rice & Jasmine Rice

Basmati rice is the most priced rice in the world with India and Pakistan leading the market. Basmati gets its special aroma and flavour,for which it is valued, under the traditional growing conditions in North India and Pakistan. But Texas (USA) Biotech Company, Ricetec took the patent for 'Texmati' an US-strain of Indian Basmati, thus trying to capture the rice market enjoyed by the traditional growers. But later after a prolonged fight by Indian civil society groups and activists, Basmati's US patent was waived.

Jasmine rice is one of the most sought after strains of rice in the world, known for its fragrance and texture and is mostly cultivated by small scale farmers in Thailand. US biotech companies especially Rice Tec, Texas is selling rice under the false label as 'Jasmati', the 'American Jasmine'. Biotech companies being favoured by US federal laws and the

US strain of Jasmine Rice would stand against genuine jasmine in its largest market, the USA. Civil society groups in South East Asia are fighting the biotech companies to protect jasmine rice & livelihoods.

Thus multinational biotech companies are trying their best to get exclusive patents of rice germplasm of Asian countries, thus trying to control the multibillion market of the worlds' most important staple crop.

The Raipur collection and pirates

The Indira Gandhi Agricultural University, Raipur is having a 22500 strong collection of rice strains mostly of varieties from Madhyapradesh. Now a separate state, Chattisgarh (one of the rice bowls of our nation producing 6 million tonnes of rice.) is home to this invaluable collection mostly done by late Dr. R.H. Richharia, former Director, CRRI, Cuttack.

This is the second largest collection in the world and first in India

Immense pressure was given by the World Bank and the IRRI to transfer this germplasm to IRRI but Dr. Richharia opposed. He was removed from the CRRI, later, when he opposed dwarf varieties being brought into the country in 1966.

Multinational companies are very much interested in getting hold of this seed collection. Syngenta tried to link with IGAU to access the collection, but was turned down due to peoples' agitation.

Indian traditional rice varieties

- India is believed to have had more than two lakh traditional rice varieties before 1960's, much of which has disappeared from our paddy fields.
- West Bengal, the top producer, had 5600 varieties before 1966 and now less than 500 are left.
- Traditional varieties were completely replaced by foreign genes like the Dee-gee-woo-gen during the green revolution.
- Today India's popular varieties have a alarmingly narrow genetic base.

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