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Conference: Planning for a Carbon Neutral World: Challenges for Cities and Regions.

Hans Harms

Two Perspectives (from India and Europe) on Planning for a Carbon Neutral World, Focus on Agriculture.

My intention with this paper is to widen the discussion of our conference "Planning for a Carbon neutral World: Challenges for Cities and Regions" from the European and American perspectives to a global perspective including the developing countries and especially India. Therefore, I first provide some information on the global context of development. Secondly, I try to convey a perspective from India, (where I had been traveling, and last year had participated in a very informative study trip to Tamil Nadu and Kerala in South India). Then I will present some results of recent international discussions and global conferences on the topic of climate change and poverty and on 'what needs to be done' with some examples of local practice from South India and finally, draw some conclusions.

Global Context.

Today's globalized world is deeply contradictory. On the one hand, there is growing interdependence, exchange and interaction between many different parts of the globe. On the other hand there are huge areas and population groups that are virtually excluded from any meaningful interaction with the rest of the world. They have experienced stagnation and decline, insecurity and mounting social chaos, and even outright economic and political devastation through famine and war. About 40% of the world's people live in such societies. Humanity's accumulated knowledge and its access to resources and technology have advanced adequately to abolish poverty, mass deprivation and drudgery, not to speak of degrading forms of labor. Yet about a third of humanity lives on less than two dollars a day and some 1.2 billion people have to make due with just one dollar a day. They are hardly contributing to the problem of climate change, but much more affected by it than the affluent North. (Bidwai, P., 2006. p. 31 ; and UN, Dept. of Economic and Social Affairs, 2005.: Report on the World Social Situation 2005: The Unequal Predicament).

North-South disparities have greatly worsened. Measured as the ratio of average income in the industrialized and the developing countries, they have risen from roughly 30:1 at the end of World War II, to 60:1 in the 1970s to over 90:1 now. However in many ways, the true fault-lines do not run between the global North and the global South. Rather they run between different classes and social groups in *both* parts of the world. There is a South within many countries of the North – a large part of society that is characterized by chronic poverty, unemployment and economic disempowerment. And there is a North within the South, which is comprised of enclaves of affluence, privilege and high

consumption of resources comparable to (and in some places higher) than the consumption pattern of the wealthy of the Northern countries. The size of the affluent class in the South countries has been growing. According to an estimate (Merril Lynch, 2004) as many as 3.3 million of the world's 7.6 million super affluent people with financial assets exceeding one million US dollars each (excluding immovable property) live in the Southern countries.

With industrialization and chains of production spreading over the globe, a new division of labor is being consolidated: not only labor-intensive processes are shifted from the North to the South, also polluting, dirty and hazardous industries and activities are being shifted to developing countries. The South is also the prime location for the production of toxic chemicals and fertilizers, not to speak of disposal and dumping of industrial and municipal wastes. The North reaps the benefits of this division and avoids the most polluting processes in its countries, even as it consumes three-fourth of the planet's resources. (Bidwai, P., 2006, p.37-38)

Europe and the advanced capitalist countries of the North have the highest living standards (measured by criteria such as: car ownership and GDP per capita), they are consuming the highest amount of fossil fuels and have the highest rates of carbon emission per capita in the world, with the US in first place. (See: Table 1). The fertilizer use (kg/sqkm of cropland) in the European countries is extremely high (See: Table 2). Climate change and the environmental crisis are caused above all by the North, by over-consumption of resources and by the method of capital-intensive and chemical fertilizer-intensive agriculture. In addition, the international institutions (World Bank, IMF) dominated by 'economic experts' of the North, are since the 1970s pursuing the neoliberal dogma of market orthodoxy and push unregulated 'free markets' and 'structural adjustment' on to the less developed countries. (The aim is to eliminate barriers for capital and to extend the reach of capital as far as possible.) Their demands for privatization of public infrastructure and services and for reducing the role of the state (often with coercive pressure) have lead in most cases to the take-over of international corporations with increasing costs, without improving the infrastructure and services for the poor. (For example: after the privatization of water in Bolivia to the Bechtel Corporation and revolts against rising costs for deteriorated services, the government had to resign and the contract was stopped). It is a 'free market' with unequal partners and grossly uneven terms of inclusion. The present conditions for globalization are man-made, facilitated by the 'information revolution' of internet and computer, but often presented as if they were natural events. The question is not whether globalization is good or bad, but under what conditions globalization is regulated and who gains and who looses under the present conditions. Markets are not known for producing a just distribution of goods and services. They do produce inequality, and therefore require interventions and regulations. The present conditions for globalization are not agreed democratically, they are set by the economic and political 'experts' of the most powerful nations (i.e. G7, WTO, etc.) and the lobbyists of the multi-national corporations. (For detailed references see: Harvey, D. 2005, *A Brief History of Neoliberalism*.) Resistance to these conditions is increasingly mounting.

The ‘Group 20plus’, lead by Brazil, India and China discontinued in 2005 the WTO Conference in Cancun, Mexico, and walked out, when the advanced capitalist countries insisted on their agenda of free markets for the export of their industrial products and financial services, while at the same time the highly subsidized agrarian markets in the US and the European Union were closed to them.
Other examples of large scale protests and demonstrations occurred in Mexico against the rising prices of corn (as the base for tortillas) and against consequences of NAFTA trade arrangements. The effects on Mexican agriculture were destructive to local markets and drove many more Mexican farmers and farm workers into the US as illegal immigrants. (See: Anne Vigna, in: Le Monde diplomatique, March 2008, p.18-19).

The crisis of global warming and carbon emission, followed by the financial and credit crisis, (based on ‘sub-prime’ mortgage lending in the US), is now followed by another crisis of global proportion: the poverty and cost of food crisis affecting mostly the developing countries in the South, and particularly Africa and South East Asia, including India. The paradox is that even as the world is producing more food than before, (also in relation to population growth) there are more hungry people now than 30 years ago. The present food crisis with its rocketing prices is provoking food riots and political unrest in many countries.
The reasons given for the acute present food crisis are: poor harvests in the last few years (and low stocks in ware houses) due to floods or droughts caused by climate conditions (i.e. Bangladesh and Australia), reduced agricultural land for food production due to the growth of biofuels to substitute fossil fuel or to grow cash crops for export (i.e. soya and maize to feed cattle for beef production) and in general a neglect or non-support of local agricultural production for local consumption. The fact that the World Bank and IMF with their advice promoted the growth of cash crops for the world market instead of local food self- sufficiency is not mentioned.
An additional important component for the rising food prices is that free-floating speculative money (since the sub-prime credit crisis), is now gambling into commodities like oil and grains.

The developing countries are in the process of trying to catch up in production and living standards with the advanced capitalist counties. The two most populous counties in Asia: China and India have very high economic growth rates (over 9%) especially in the cities. While in China the growth is largely based on production in the manufacturing industries with high CO2 emissions, in India it is mainly based on the growth of new services and especially on IT industries affecting 1 to 2 million people or only 0.1 to 0.2 % of the total population. The growth and its benefits have been very unevenly distributed within these countries. The governing elites in India and other countries, with support of the IMF and the World Bank, are promoting increased industrialization and to a large extent neglected the support of agriculture. In particularly those countries, where up to two thirds of the population is depending on agriculture, have spent least on agriculture (Philippines, Indonesia and India). The IMF has often demanded, as condition for development credits, to close state agencies that i.e. regulate food prices, provide seeds and small credits for local farmers and help with advice and marketing of local products, all in the name of promoting the ‘free market’ and with the assumption that many of these agencies

are corrupt and inefficient. This may be so in some cases, but they have been abolished without any better replacement. What they have been replaced with are the regularities of the market. Specialization of the larger farmers has increased, and the most fertile regions were used for export production in large quantities, causing additional global transport and CO2 emissions. Production for local sustainable food consumption (with low transport miles) was neglected. Also, development aid from the industrialized countries for agriculture in the third world, was reduced from 6.2 billion $ in 1982 to 2.3 billion $ in 2002. (See: Die Zeit, 17.4. 2008, p.21-23, 'Wut im Bauch'.) The effects were, food imports from international agricultural corporations (highly subsidized in their own countries), and so undercutting of local food prices. This destroyed local agricultural markets and labor-intensive chains of production connected to it, and drove more poor farmers into the cities.

World-wide conferences and research projects on cities and megacities have been focusing on problems and chances of the urban areas, where overall economic productivity is considerably higher than in rural areas. Therefore, it is often assumed that rural areas are negligible, or that the rural problem would resolve itself by migration to the cities (as had happened during industrialization in Europe).

The hunger crisis and recent rises of food prices point in a direction, that shows rural areas and local food production cannot be neglected, and that the high-technology and high fossil-fuel based and low human labor intense agricultural development model of the North cannot be transferred to the South, in fact it is fatal for the South.

A recent report of the UN Population Division predicted that there will be 27 megacities with at least 10 million residents by mid-century in the world, compared with 19 giant metropolitan areas today. But it said also at least half of the urban growth in coming decades will be in smaller cities that now have fewer than 500 000 people. Because of China's rapid urbanization, it is expected to became 50 per cent urbanized around 2020-2025. It is 40 per cent urbanized now. By contrast, the world's second-most populous nation, India (with nearly 1200 million inhabitants) has only a third urban dwellers (300 million) and over 800 million rural dwellers (71%). India is expected by 2050 (according to recent estimates) to have 900 million people (55%) of its population living in cities. This would mean 600 million more in cities than to day. At the same time it is not known, how so many people are going to be integrated into the cities and what their living conditions could be. The present situation of 35 to 50% living in urban slum conditions and with extremely precarious incomes cannot be the model for the future.

See Appendix:
Table 1: Urban Population, Development and the Environment
Table 2: Rural Population, Development and the Environment

A Perspective from India on planning for a carbon neutral world, focusing on Agriculture and rural regions.

The effects of globalized industrialized agriculture from the North on the rural economies of the South, especially shown on the example of India, are devastating since the Indian government accepted the regulations of 'structural adjustment' and 'trade liberalization'

favoring the ‘global players’ (i.e. international corporations) represented by the IMF, the World Bank and the WTO.
The structural changes of industrial production in the North have spread industrial work, production sites and service work to countries with low labor costs and low environmental standards, and thereby created some jobs in the South, mostly located in cities.
At the same time trade liberalization for agricultural products, (leading to cheap and subsidized imports), had in India the effect of destroying local markets and rural production chains that employed millions of people in rural areas. The difference in scale of agricultural employment is important here. Whereas in the UK one per cent of the population of 60 million is employed in farming, in India 65 per cent of the total population of 1.200 million (that is over 700 million people, more than the total population of Latin America) are still living on the land. Up to recently, 90% of India’s food was produced and processed locally for local consumption and sale, and India was self-sufficient for feeding its population.

Since the end of the 1990s India experiences one of the worst agricultural crises. This was and is the result of political decisions, among others the decision to stop investing in agriculture. The next step was agro-political deregulation and less state control of prices for inputs in agriculture. Chemical fertilizer prices increased between 1991 and 2000 four times, costs for seeds went up between 100 and 300 %. The quality of seeds was reduced, while formerly it was guaranteed that 85 % of seeds would germinate, in some cases this was reduced to 60%. The costs for privatized electricity increased by 70%. Sources of credit were closed, in the state of Andhra Pradesh in ten years 4000 local bank branches were closed, which meant farmers had to rely on credit sharks. No wonder that the credit burden exploded. In the same time the official credit policy was aiming to provide more and more credit for the upper middle classes and their luxury consumption. While the input costs into agriculture for small farmers were increasing and the credit trap closed, the sales prices for the harvests of millions of small and middle sized farms dropped. The new rules of the game provided no securities against the risks of the market, as the state had offered before. Instead the farmers were advised to produce cash crops for export. The price drop in Indian products was caused to a large proportion by the now duty free import of highly subsidized agricultural products from the EU and the US, Canada and Australia. The macabre joke goes that the daily subsidy for a cow in these countries is double the minimum wage of an agricultural laborer in India. A farmer’s leader once said: the dream of an Indian farmer is to be reborn as a European cow. So, there is a direct connection between these subsidies and the suicides of Indian farmers. (See: Le Monde diplomatique, Jan. 2008, p.18-19: Boese Saat in Andra Pradesh)

Three examples can further illustrate the destructive processes:

- In 1998 the US lobbyists for the soy bean market were manipulating the WTO that all import restrictions for soya and for edible oil products should be removed from the Indian market. The subsidized US soya price for export was $150 per ton. (Behind this price stood a subsidy of $193 per ton in the US.) The Indian government had at the same time, based on the argument of ‘food safety’, introduced a new packaging regulation for edible

oils that banned the sale of unpackaged edible oils. This law in combination with the WTO-mandated removal of import restrictions, made it possible to flood India's markets with oil, partly from genetically engineered soybeans.

"India has used the coconut, groundnut, linseed, mustard, sunflower, and sesame for edible oil. The main consequence of eliminating import restrictions was the destruction of our oilseed biodiversity and the diversity of our edible oils and food cultures. … Since indigenous oilseeds are high in oil content, they can be processed at the household or community level, with eco-friendly, decentralized, and democratic technologies.

The entire process of making oil from soyabeans is controlled by corporations. Cargill, Continental, and other trading giants control the trade and milling operations internationally. Because of the soyabean's low oil content, extraction requires heavy processing that is environmentally unfriendly and unhealthy." (Shiva, Vandana, (2005), Earth Democracy, p.153-154.)

The soyabean flood undercut the great variety of locally produced edible oils, and wiped out local cooking oil productions in India, and with it wiped out local jobs and increased unemployment in the rural areas and small towns.

- Another example is the coconut and the economy connected to it. Every part of the coconut tree is traditionally used in an eco-friendly way: the large leaves for walls, roofs and fence making, the outside of the nuts consist of fibers used for making mats, carpets and ropes, the hard shell is used as fuel for cooking, from the inner meat or copra oil is extracted, and the inner fluid is a refreshing drink. Rope, carpet and matt making is declining strongly and replaced by cheap substitutes of plastic or nylon that often is fossil fuel based. So the people, mostly women who produced the products are now hardly able to sell their products in the local and international markets. Formerly fluctuations in price were compensated by state subsidies, they are now by WTO rules not allowed any more. It led in Kerala to increasing rates of farmer suicides.

- The third example relates to the subsidized sale of genetically engineered and 'non-renewable' seeds. Under the WTO rules of trade liberalization for agricultural products international corporations like Monsanto are selling genetically modified (GM) or hybrid seeds of cotton, maize and rice to Indian farmers. They are 'non-renewable' in the sense that seeds from the first crop cannot be used to grow the second crop, as was done in traditional farming. (This method created a large variety of locally adapted plants.) Now for each crop new uniform seeds have to be purchased, so the farmers become dependent and indebted to local sales agents, who give credits. The monopoly firms sold the seeds initially at a subsidized low price and after several years the prices increased. (It is a similar system as the sale of subprime mortgages to low-income people in the US.) After bad crops, (often from seeds less adapted to local climate and soil conditions) and loaded with unpayable depts massive suicides of farmers occurred starting in 1997. Since that time more than 150 000 farmers took their lives.

There are other effects from the GM plants, i.e. thousands of sheep died after eating from the toxic cotton plants, workers on the farms and in factories get allergies and the cotton often turned out inferior.

Another issue is that the Indian government and many state governments are promoting to follow the Chinese example of setting up industrial development zones that require large areas of land, often in rural areas near the location of natural resources. The rush to industrialize has left tribal people and 'untouchables' not only far behind, but often deprived them of their rights to live in their natural areas, causing rising anger and guerilla warfare in rural areas.
India has one of the most unequal systems of land ownership in the world. The manifesto on which the Congress Party was elected promised land reforms that have not arrived. Instead land has been taken away from villages where, often where traditional ownership is not documented by paper titles. In the past decade, more than 1.4 million Indians have been removed from 10 million acres of land in four states to pave the way for industry and infrastructure projects, according to a recent report by ActionAid, an international poverty agency. (Jason Motlagh, in: San Francisco Chronicle. 22. 2. 2008, p. A13). Last year November 25,000 farmers and rural workers protested and arrived in New Delhi to call on the government with demands for the promised land titles. The issue is an explosive one. Extreme leftwing groups have tapped the rising anger in rural areas to wage low-intensity guerilla wars in 172 of the country's 600 districts. Riots and armed insurrections (Naxalites) are now prominent features in rural areas, especially in the North Eastern regions (in remote areas inside a dense forest belt that runs from Orissa to Nepal), where tribal and other poor communities are threatened by multinational companies as well as Indian corporations like the car producing Tata corporation, intent on exploiting India's natural resources such as coal, timber and minerals.
The Indian government committed in March this year $15 billion to bailout 30 million indebted small farmers. The finance minister was saying that the economic boom (9.6% growth, the highest in 18 years) had seen a section of the rich 'get very rich' and he wanted 'to make the growth more inclusive'. But the director of the Centre for Policy Studies, a Delhi economic think tank warned that to revive agriculture you need to built canals, roads and warehouses and not just to offer a 'one-off rescue package' to win votes. The neglect of agriculture and rural areas has to be stopped. Farm growth is forecast to slow to 2.6% this year from 3.8% last year. This is raising concerns among experts about India's ability to continue to feed itself, which it still does. (Randeep Ramesh, in: The Guardian Weekly, 7. 3. 08, p.10).

What is to be done?

The relations between urban and rural problems need to be analyzed globally, but in conjunction with their different local manifestations. It is important to consider the great variety of local rural situations, their cultural origins and causes and to develop local solutions adapted to the local conditions and with the participation of local actors.
The uniform and supposedly 'fit for all' global regulations for a supposedly 'free market' of agricultural products set by international organizations has to be changed.
The present system of regulations has absurd and highly unequal and counterproductive effects:
- It is benefiting only the 'global players', farm lobbies in the EU and USA, whole sale global trading corporations, global chemical and GM producing corporations, financial speculators on time contracts for agricultural products at commodity futures exchanges

(i.e. speculation of hedge-fond mangers in ‘futures’ in Chicago. See: Der Spiegel 17, 2008 p. 108-112).
- It increases the climate crisis through high CO2 emissions, at the local level from very high use of chemical fertilizers (produced with fossil fuels) and high technology use in agricultural mono-cultural production methods. These methods are highly productive in yields per hectare for uniform products, but their environmental damage and social costs are not accounted for. They minimize employment of agricultural workers and destroy in developing countries the livelihood of the rural population. They pollute local soils, water and forests. Their required global marketing and transportation network again increases CO2 emissions.
- It is destroying locally efficient small scale agricultural production of high bio-divers products based on village and family farms for local consumption with reduced transportation needs. In India (and other third world countries) it is destroying the livelihood and the life of local farmers, drives them into ruin and often into suicide or in large numbers into the cities and there into conditions of informal slum life and mostly informal economic subsistence.

A different paradigm of agricultural production, exchange and consumption is required with the aim to:
- reduce hunger in the local situations through increased local ecologically friendly food production,
- reduce CO2 emissions locally and globally through the reduction in the use of chemical fertilizers and reduced global transport,
- increase and keep bio-diversity, improve locally based agricultural production chains for local consumption that keep and provide jobs
- increase the quality of life and food in a great variety of local situations.

These aims are globally relevant, but especially important in those developing countries where still a large proportion of the population is living in rural areas, and where the employment possibilities in formally organized urban jobs are highly reduced and the precarious informal urban economy is the dominant life situation for rural migrants to metropolitan areas.
Farming in Europe and the US also has to be changed. A different subsidy structure is required that primarily supports ecologically friendly family farms and nature preservation. The present subsidy system, benefiting large scale industrial farming, the chemical industry and the large chain stores and supermarkets has to be altered.
The EU Agricultural Commission distributes each year 50 billion Euros to European farmers, and it is planned to remain so until 2013. The commission knows about the crisis of its subsidy policy, and started a reform in 2003. Instead of subsidizing surplus production a new approach promises to protect the environment. But the farmers lobby including the German minister of agriculture is against the introduction of ecological criteria for the subsidies and also against the reduction of subsidies for large scale industrial farming. (See: Die Zeit, Nr.19, 30.4. 2008, p. 25. Schuld am Elend)

This year in April the UN sponsored final **report on the future of agriculture** was released with considerable publicity in the international media. The conference in

Johannesburg was the culmination of the work of four years by some 400 agricultural experts, including representatives of local organizations. Robert Watson, the top advisor of the British government on questions of climate and environment, was the director of IAASTD, International Assessment of Agricultural Science and Technology for Development. The sober evaluation of thousands of studies was to overcome the controversy about gene technology and ecological production in agriculture and propose recommendations in which way research would best help farmers in developing countries. At the final international conference under the auspices of several UN agencies and the World Bank, scientists, food activists, non-government organizations, corporate and government representatives met for nearly a week in South Africa to debate solutions and find a consensus to the thorny, intertwined problems of global agriculture, climate change, hunger, poverty, power and influence. On the last day, 55 governments agreed on the IAASTD final report, overcoming difficult negotiations and a recent departure of the representatives of the agro-chemical industry.

The approved report is a sobering account of the failure of industrial farming. It calls for a fundamental change in the way farming is done, to address soaring food prices, hunger, social inequities and environmental disasters.
I present here a few quotes from the Civil Society statement from Johannesburg:
(See: www.greenmediatoolshed.org/news/item.)

“The report reflects a growing consensus among the global scientific community and most governments that the old paradigm of industrial, energy-intensive and toxic agriculture is a concept of the past. The key message of the report is that small-scale farmers and agro-ecological methods provide the way forward to avert the current food crisis and meet the needs of local communities. For the first time an independent, global assessment acknowledges that farming has a diversity of environmental and social functions and that nations and people have the right to democratically determine their best food and agricultural policies.”

“The IAASTD process itself was a path-breaking one, in which governments, major research institutions, industry and civil society shared equal responsibility in its governance and implementation. Its success proves that civil society participation as full partners in intergovernmental processes is critical to meeting the challenges of the 21st century“.

“Canada, Australia, the United Kingdom and the United states have as yet not signed on to the final report. After watering down the formulation of several key findings during the meeting in Johannesburg, the US still claimed the assessment was unbalanced. The exact same allegation came some months earlier from the agrochemical and biotechnology industry.”

In the last part of this chapter a few important examples of innovative forms of local planning and eco-friendly agricultural production providing sustainable livelihoods without urban migration will be shown, as they are presently practiced and taught in different locations and universities in Kerala and Tamil Nadu in South India.

In the Indian federal state of Kerala (population of 31 million) decentralized planning was initiated in the 1970s and it gained momentum in the 1980s. During these two decades many groups had learned through trial and error ways to mobilize large groups of the population to participate in political campaigns for social justice. The promoters of the People's Campaign for Decentralized Planning (PCDP) drew extensively on the experience of non-governmental organizations, cooperatives, and government agencies in the state. They also drew on some 15 years of extensive theoretical work.

The campaign is probably the largest experiment in local democracy and local empowerment being carried out in the world today. Kerala is known for its high level of literacy (over 95% including women), life expectancy and political participation. Coalitions of left-wing democratic parties, including the communist party, had since independence been elected several times (interspersed with periods when the Congress Party was elected) and influenced the political climate through land reforms and wide spread educational programs.

In 1987 the Left Democratic Front (LDF) ministry had created under the heading "New Democratic Initiatives", locally elected district councils, a mass literacy campaign, a "people's resource mapping program" to teach villagers how to evaluate their local resources and in northern Kerala an overall model of local planning was developed in which social, economic and environmental concerns were addressed. When the LDF was elected as state government in 1996 to 2001, decentralized planning was implemented in a bipartisan way, including many people from the opposition and independent intellectuals. The people's campaign began with local assemblies between August and December of 1996 nearly 3 million people met with their neighbors, listed their grievances, and elected topic groups to set the stage for the local planning process. In 1997 every one of the Kerala's 990 villages and 62 urban units produced a report, running from 50 to 200 pages. These reports cover local history and include basic statistics collected from scattered government offices into a fairly coherent picture of the local community and its resources. Resource mapping and walks provide information on local ecological zones for future planning use. Delays in completing the work of the task forces slowed the entire campaign. Many task forces had drawn up sets of projects, however, and the elected village and urban councils worked on the job of choosing priorities according to the appropriate amount of state grant they expected. Controversies developed in finalizing the plans and there were continuing disputes with government officials over the boundaries between the people's campaign and the regular government machinery. Funds from the state's budget were after project assessments disbursed to the local councils.

In the middle of implementation, national elections were called. The tentative bipartisan environment the campaign had created started to disappear. The opposition suspected that the Left was trying to gain political advantage by taking credit for achieving decentralization. Conservative media launched a scathing attack on the people's campaign and the implementation process was severely interrupted. But an assessment of the campaign and its results came to the conclusion that the achievements of the first two years were striking. (See: Isaac and Franke, 2000, New Delhi, Local Democracy and Development, p.181 ff):

"Nearly two million individual beneficiaries received seeds, seedlings, fertilizers and other benefits in the agricultural sector, while 168,552 cows and 125,481 goats were distributed. 54,712 house, 20,344 cowsheds and 136,110 latrines were constructed. 24,931 wells were dug and 9,256 new water taps installed. 8,635 ponds were cleaned or desilted. 4,743 kilometers of roads, 989 culverts and 425 bridges were built."
To answer the snowballing criticism by the opposition parties and a part of the media a one day People's Development Festival was organized where 150 villages presented what they had done.
The next years programs were improved, people and organizers learned by doing, planning had been demystified, detailed handbooks were produced for the sectoral workshops, universities were involved, more women were elected and training programs installed, ties to cooperatives were strengthened, since private commercial banks refused to be involved.
Small-scale experiments across India have demonstrated that development planning organized around watersheds can bring dramatic improvements in the ability of drinking water and crop productivity. The People's Campaign in Kerala has started to develop an overall, integrated set of watershed development plans. In the first three years of the campaign more land were added to food production, an increase of 5.65% over the cultivated area of the previous year. This includes reclamation of wastelands often via small-scale irrigation.

In Tamil Nadu, the neighboring state of Kerala, two other places and programs can be mentioned where innovative improvements in local agriculture are developed, practiced and taught (I had a chance to visit both during the before mentioned study trip to South India in Febr./March 2007 under the direction of Klaus Liebig and Koshi M. John):

First, the Swaminathan Research Foundation in Pondicherri initiated in 1991 a human centered development program known as the "Biovillage Model" which combines natural resource conservation and improvement with poverty eradication and women's empowerment. It was initiated in 3 villages with the support of the Asian Development Bank and the International Fund for Agricultural Development. The aim of the project is to work with households below the poverty line in selected villages. The dominant national development path had left major problems in the rural areas that the program tries to address: increasingly women and children were effected by poverty, a prevalence of malnutrition among children, general economic growth without job creation, increasing rich-poor divide also in rural areas, increasing damage to basic life support systems of land, water, forests and bio-diversity, and others. The Biovillage concept includes the setting up of 'biocentres' which are operated by 'biovillage societies' constituted by the principle stakeholders: rural families and members of the foundation. Experience with both externally and nationally funded rural development schemes has shown that quite often the scheme collapses when the external funding is withdrawn. Therefore a withdrawal strategy is built into the design of the project. This is based on efforts to build the capacity of rural families to manage the enterprise of their own. This involves building new voices and new leaders within the society.
The 'biocenter' performs the following functions: it enables decentralized production through the provision of key centralized services, it provides the necessary production

and market information, it provides the infrastructure essential for training, networking and capacity building, it serves as a meeting place for the exchange of experiences and ideas and the necessary facilities for the effective functioning of the 'biovillage society'. The 'biocenter' becomes the hub for the 'biovillage' movement. Gradually it is planned that it will be managed by the families themselves. Each 'biocenter' consists of a large site where different production activities are demonstrated (fish ponds, service facilities such as animal health care, poultry feed methods, mushroom processing, biocontrol agents etc.) They are the focal point of technology generation, testing of new crop varieties, training on various micro-enterprises and micro-credit management. It is also a knowledge center for sustainable food security.
The program was expanded in 1995 to cover 19 villages in the Pondicherry area with the support of the UN Development Program as well as the Hunger Projects of Japan, Sweden and India. The plan is to convert all 270 villages of the Territory of Pondicherry into Biovillages.

The second place and project is the Periyar Women's University in Thanjavur that exists since about 20 years. All the students and most professors are women. It is set up especially to promote capacity building for ecologically friendly rural development, and it trains women in appropriate and sustainable technologies and management. About 3500 women per year are in the program. Research is done and experiments are performed to improve the production and use of biogas, the breeding and husbandry of animals (rabbits, goats, pigs etc.). Biological improving of seeds and methods for rice intensification are taught as well as the use of biological pesticides. The students are also taught to teach other women with little education in the villages how to become competent in local grass-root development.

Conclusion

The UN report on the future of agriculture has assessed the intertwined problems of global agriculture, climate change, hunger, poverty, power and influence. It shows the failure and dangers of industrial agriculture, including the extremely high use of fossil oil for shipping and flying food around the world.
In contrast the experiments and agricultural practices in South India produce food in an eco-friendly way with low 'food miles' and promote a new sensibility of the use of resources, and is establishing a sense for an improved 'metabolism of rural areas'. Waste is reduced and also the input of non-regenerative resources.

New concepts of development are explored and practiced. Instead of high technical and one-sided 'economic' efficiency and very low use of human labor, a human-, family- and local community centered development model is used. The model in Kerala is based on a concept of development that David C. Korten had defined as: "a process by which the members of a society increase their personal and institutional capacities to mobilize and manage their resources to produce sustainable and justly distributed improvements in their quality of life consistent with their own aspirations." This may sound idealistic and may not be reached, but as a goal it surely is valid.

Under the conditions of global warming and the hunger crisis the structural changes required in the economy of agriculture **cannot** follow the deep structural changes that has occurred through globalization in the economy of manufacturing in the form of dispersed global value adding chains with high transportation requirements, dominated by 'global players' (often a euphemism for international corporations) and predominantly located in metropolitan areas as favored locations. Agricultural production is much more place and nature-bound and related to specific soils and climates.

I will end with a few observations and statements from Vandana Shivas closing address at the Soil Association Conference in 2007, with the title: "Taking the oil out of agriculture".
She differentiates between a 'fossil fuel economy of agriculture' and a 'biodiversity economy of agriculture'. She says the one is 'killing economy' and the other a 'living economy'. "One is a planet agriculture that maintains processes of the planet and the other a planet agriculture that reduces the world to a super market. It seeks the cheapest from the furthest away places with the longer food miles".
A Danish study has shown we are putting ten times more calories into the production of food than we get out as food. Shiva claims, the high productivity of the large farm is a myth, the concentration of ownership does not translate into higher productivity, and the opposite is true. The smaller the farm the more you can produce (per acre) because you can give it more care.
So, she asks, where does the North and the South meet?
"The north needs to de-addict from oil and chemicals. The South is being pushed into the same addiction by the same powers that created the fossil-fuel addiction in the North. In the South farmers are being squeezed out of farming, and they say: We don't want to give up farming, it is not degrading. We find it dignified to earn an honest living through hard work. So, hard work is seen as degrading, as tribal, but the farmer and the fisherman are saying: don't throw me out. But they are marginal voices.
The future of the world in farming is to produce more food in diversity, locally to reduce transport and substitute fossil fuel with renewable energy, including human energy.
For the first time in 500 years since colonialism split the world into North and South, colonized and colonizer, for the first time we have the opportunity to be one family, practicing 'one plant agriculture'.
North and South need to do the same thing only start in different places. But where we have to end is living within the limits of this planet, living and working with the land in an organized way could be the most evolved way and status of human being, and not something that should be disappearing in the dustbin of history."

Appendix:

Table 1: Urban Population, Development and the Environment.
Table 2: Rural Population, Development and Environment.

Bibliography:

					Urban Population							
	Total Pop. (million)	GDP Per capita (US$)	Value Added Industry, Services as % of GDP	Value Added Agriculture as % of GDP	Urban Dwellers in millions	In slums As % of Urban Dwellers	% with Access to Improved Sanitation	% with Access to Improved Water-sources	Density Per sq km Of urban Extension	Motor vehicle In use (per 1000 pers.)	Energy Use (kg of oil Equiv. p/capita)	CO2 Emission In Metric ton/capita
World	6.514	9.462	92	3	3.165	-	80	95	902	153	1.713	4.5
US	300	41.410	99	1	2.422	-	100	100	321	7.833	7.835	20.4
Lat. Am.	558	8.333	85	9	433	27	86	96	820	1.170	1.170	2.6
Africa	922	2.503	87	12	349	51	62	84	1.589	31	712	1.3
Europe*	731	21.998	96	3	526	-	97	100	631	418	3.721	8.4
Germany	82	29.900	99	1	606	-	100	100	1006	591	4.212	9.8
UK	60	33.125	99	1	540	-	100	100	976	537	3.897	9.8
France	60	31.846	98	4	468	-	100	100	623	490	4.539	6.2
NL	16	34.289	98	2	130	-	100	100	1.056	495	5.051	8.7
Asia	3.938	6.197	94	9	1.565	35	74	94	1.577	55	1.109	3.0
China	1.313	6.716	88	13	530	38	69	93	1.936	24	1.233	4.0
India	1.135	3.331	81	18	326	35	59	95	1.592	18	513	1.2

Table 1: Urban Population, Development and the Environment. (H. Harms)
Source: UN Dept. of Economic and Social Affairs, Population Division (2008)

*Including Eastern Europe with a population of 297 million

				Rural Population									
	Total Populat. (in million) 2005	Land Area (sq km) 2005	Cropland (as % of land area) 2005	Rural Dweller (in million) 2005	Rural Dwellers As % of Total pop. 2005	Average Annual Growth Rate (%) 2000-2005	% with Access to Improved Sanitation 2004	% with Access to Improv. Water sourc. 2004	Agricult. Labor Intensity (per sqkm of Cropland) 2004	GDP per Capita In US$ 2005	Value added by Agricu (as % of GDP) 2005	Energy Use (kg of oil equiv. p/capita) 2004	Fertilizer use (kg/sqkm of cropland 2005
World	6.514	129.830	12	3.350	51	0,5	38	72	90	9.462	3	1.713	11.123
US	300	9.162	19	57	19	0,7	100	100	2	41.410	1	7.835	12.153
Lat. Am.	558	20.252	8	125	22	- 0,6	49	73	26	8.333	9	1.170	5.188
Africa	922	29.360	8	573	62	1,7	33	48	93	2.503	12	712	2.721
Europe *	731	22.088	13	205	28	- 0,3	86	90	9	21.998	3	3.721	11.552
Germany	82	349	35	22	27	- 0,1	100	100	7	29.900	1	4.212	42.076
UK	60	242	24	6	10	- 0,2	100	100	8	33.125	1	3.897	32.665
France	60	550	36	14	23	- 0,2	100	100	4	31.846	4	4.539	12.777
NL	16	34	28	3	20	- 2,7	100	100	23	34.289	2	5.051	39.841
Asia	3.938	30.973	17	2.373	60	0,3	34	76	199	6.197	9	1.109	15.924
China	1.313	9.326	12	782	60	- 0,8	28	67	452	6.716	13	1.233	37.934
India	1.135	2.973	57	808	71	1,3	22	83	163	3.331	18	513	9.838

Table 2: Rural Population, Development and the Environment. (H. Harms)
Source: UN Dept. of Economic and Social Affairs, Population Division (2008)

* Including Eastern Europe with a population of 297 million and a land area of 18.061 sq km