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A revolution long turned brown

The measure of the Budget lies in whether the proposals have the potential to provide an effective solution to the crisis of the agrarian community. On that score, says [Kasturi Das](#), there will be little to cheer as long as the government persist with the failed Green Revolution model.



August 2004 - The United Progressive Alliance (UPA) government has managed to bag huge accolades from different quarters for its explicit emphasis on agriculture and rural India. From the manner in which agriculture and farmers' welfare had figured among the basic principles of governance enlisted in the National Common Minimum Programme (NCMP) of the UPA, this emphasis was to be expected. In fact, in order to establish its pro-farmer credentials, several sops including a major debt relief package had already been announced long before the unveiling of the budget proposals. The budget can at best be regarded as an attempt to lay the foundation stone of the "New Deal" for rural India, in line with the blueprint drawn in the NCMP.

The real measure of the budget, however, lies not merely in the government's plans for agriculture, but in whether the proposals have the potential to provide an effective solution to the burgeoning crisis of the agrarian community of the country. Unfortunately, the answer is in the negative. The UPA's recipe has miserably failed in identifying the fundamental reasons behind this unprecedented crisis, and from that mistaken beginning, an adequate solution is unlikely to take shape.

The problems are ingrained in the Green Revolution model of agriculture. It is true that the Green Revolution has succeeded in transforming India from a famine-ridden, starving nation of the 1960s into a food-surplus country today. Notwithstanding this commendable performance, the fallout of this chemical intensive farming has not only left India with severe health and environmental hazards (e.g., soil erosion, water contamination, pesticide poisoning, falling ground water table, water logging, salinisation, depletion of biodiversity, and so on), but has also put the long-run sustainability of Indian agriculture and the survival of the farming community itself under question.

The capital-intensive nature of the Green Revolution agriculture has forced many farmers to get into debt in order to cope with the massive expenses of cultivation. These debts did not pose any threat as long as the yields were impressive. However, the yield curves have started showing downward trends since the end of the nineties. Indiscriminate application of chemical fertilizers has over the years depleted the fertility and productivity of soil, leaving farmers with no other option than to apply ever-increasing doses of fertilizers to maintain their crop yields. While this has often required them to increase their burden of debt, crop yields have failed to show much improvement.

Moreover, pest problems have accelerated over time requiring increasing application of chemical pesticides, which has further increased the debt burden of the farmers. The irrigation-intensity of this chemical-intensive agriculture has furthermore generated an escalating demand for irrigation water, often requiring farmers to borrow even more to cover the expenses of irrigation.

The inherent contradictions of the Green Revolution model have rendered the agricultural system unsustainable, thereby throwing the farmers into a vicious circle of debt and distress.

In a nutshell, the inherent contradictions of the Green Revolution model have rendered the agricultural system unsustainable, thereby throwing the farmers into a vicious circle of debt and distress.

The present scenario in Punjab, once the role model of the Green Revolution, is a perfect case in point. The monocultivation of paddy-wheat rotation ever since the arrival of the Green Revolution has generated such colossal degradation of the environment and natural resources (including land and water) of the north-western state that the long run sustainability of the much-glorified Green Revolution model has now come under serious questions. The law of diminishing returns has set in, owing to the massive depletion of soil fertility. The productivity of rice and wheat, the major crops of the state, which occupy more than 70 per cent of its gross cropped area, has already approached a plateau. Declining productivity and repeated crop failures in the face of ever-increasing costs of cultivation have left scores of farmers trapped into a vicious cycle of debt, forcing many of them to take recourse to the ultimate path of suicide.

The agrarian impasse is witnessed not only in Punjab, but also in several other states characterized by chemical-intensive farming, such as, Andhra Pradesh, Haryana, (western) Uttar Pradesh, Tamilnadu, Kerala etc. The only way out of this deep-rooted crisis lies in replacing the failed model of chemical intensive farming by more sustainable alternatives. In fact, having realized this truth, thousands of farmers in different states of India (e.g. Punjab, Andhra Pradesh, Maharashtra, Kerala etc.) have already started switching over to organic agriculture. What is now required is a bold structural shift in policy focus in this direction.

Successive governments at the Centre, however, have refused to accept this blatant reality and have continued to promote the unsustainable model of Green Revolution agriculture, thereby worsening the state of affairs. What is more disappointing is that despite its declared commitment towards eradicating the plight of the farmers, the UPA Government has also failed to break away from this fallacious path followed by its predecessors. Instead, the pro-farmer recipe of UPA seems to have been designed to endorse the destructive model of Green Revolution agriculture even further.

The UPA has adopted a two-pronged strategy for overcoming the farmers' misery. On the one hand, debt relief packages have been announced to provide immediate relief from existing debt burdens, while on the other, the flow of agricultural credit has been proposed to be increased. However, while the former may at best be regarded as a temporary solution to a chronic problem, the latter, if implemented properly, will merely equip the impoverished farmers with the funds to incur the ever-increasing expenses of chemical intensive farming. Neither of the measures has the potential to provide a long run solution to the farmers' distress, simply because they leave the root cause of mounting agricultural credit requirements completely unaddressed.

Irrigation has been accorded overriding priority in the budget. Huge funds have been allotted for completion of stalled irrigation projects. Moreover, expressing deep concern over the impending water crisis in the country, the budget has further proposed to launch a massive programme to repair, renovate and restore all the water bodies that are directly linked to agriculture, as well as a nation-wide water harvesting scheme. However, nothing has been said about the significant contribution of chemical-intensive farming towards this water crisis, which has already reached an alarming stage in different parts of India.

It is a known fact that hybrid seeds-based Green Revolution technology is by nature irrigation intensive. Moreover, the persistent practice of conventional farming techniques increasingly decreases the water holding capacity of the soil as well as the rate of water infiltration. Both these factors end up downgrading the water use efficiency of the soil, thereby escalating the irrigation requirement. This, in turn, results in over-exploitation of water resources as well as other perilous repercussions. In Punjab (where 93% of total cultivable area is under irrigation), for instance, the water table is declining at a rate of 0.23 cm per annum in some parts (e.g. central districts) primarily due to indiscriminate use of irrigation.

There is no denying the importance of further development of irrigation facilities in shielding the farmers from the vagaries of nature. Launching of water-harvesting schemes as proposed in the budget is also a welcome step forward. However, what is further required at this juncture is replacement of irrigation-intensive conventional farming techniques by water-saving alternatives. Unfortunately, no such attempt has been made in the rural agenda of the UPA.

Remarkably, organic agriculture is such an alternative to the Green Revolution model, which possesses the rare potential of becoming the panacea for each and every problems highlighted above (see links in box).

- [Organics: The strategic case](#)
- [Transitioning to organic](#)

It, furthermore, contains the promise of qualifying as an appropriate technology even for the rain-fed or dry farming areas, predominantly characterized by natural farming methods. Incidentally, while addressing the Chief Ministers' conference on 'Poverty Alleviation and Rural Prosperity through Panchayati Raj' a few days before the budget, Dr. Manmohan Singh pointed to the possibility of turning the disadvantage of low-input agriculture into the advantage of high value organic farming. Despite this, organic agriculture did not find even a passing mention in the union budget as a viable option in dryland areas, even though the budget called for a special focus of agricultural research on farming in drylands and unirrigated areas. The Indian Council of Agricultural Research should direct a substantial chunk of the funds allocated for this purpose to explore ways and means of converting the rain fed areas into 'certified organic' zones.

Organic agriculture also contains the potential, under the right circumstances, to contribute to local food security, poverty reduction and rural development- issues, which have been accorded utmost priority in the "New Deal" of the UPA. In fact, the prospective role of organic agriculture in this regard has already found recognition from the Food and Agriculture Organisation (FAO) of the United Nations. Unfortunately, despite such multiplicity of promises ingrained in it, organic agriculture has failed to impress upon the government at the Centre.



Notably, while the organic alternative has been ignored completely, the budget has emphasized the importance of rapid expansion of agricultural research in the new frontier of Biotechnology. Going by the way India has been moving forward with commercial cultivation of transgenic crops during the last few years, allegedly without adequate impact assessments, it will not be unreasonable to expect that the lion's share of the funds granted to ICAR for biotech research will be spent on transgenic oriented research, rather than on non-transgenic applications of Biotechnology (such as, biopesticides, biofertilizers, bio-remediation etc.)- unless of course the new Government brings some drastic changes in the agricultural biotechnology policy followed so far by its predecessors.

However, at a time when the long run environmental and health implications of GM-crops are yet to be revealed conclusively and when several countries of the world are imposing fresh bans on GM-crops, one cannot help questioning the rationale behind the promotion of GM crops in India.

Even the 'Task Force on Application of Biotechnology in Agriculture', in its report submitted recently has advised, "Transgenic approach should be considered when other options to achieve the objectives are either not available or not feasible". It has further pointed out that the guiding principle of the agriculture policy should be, "do not worship or discard a tool because either it is old or new; adopt such technologies which can take us to the desired goal speedily, surely and safely". If one indeed goes by this tenet, then organic agriculture, and not genetic modification, should be the right technology to adopt. ⊕

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