INTEGRATING NREG & RAINFED FARMING SYSTEMS IMPROVEMENT

Vulnerability to rainfall fluctuations limits the scope of private investments in rainfed farming systems. Ground water access showed some sense of security but very soon lead to congestion and competitive access resulting in investment losses precipitating a large crisis. Those who have access to water moved into the high-input, high-cost agriculture taking much larger risks based on a fragile natural resource base. This has compounded the problem further and has deepened the crisis in these rainfed areas.

Securing the natural resource base of the rainfed farming systems is a fundamental issue. Soil conservation alone did not serve the purpose as it did not improve the overall soil health in the absence of soil organic matter. As the labor costs increased and with seasonal labour scarcities, private investments have opted for chemical ways foregoing the traditional methods of soil fertility management. This very narrow, short-term focus has led to imbalances in nutrient use that has precipitated micro-nutrient deficiencies and kicked off yet another spiral of increasing costs! Long-term sustainable measures of resource management have been a victim and agriculture growth has been impaired with accumulated nutrient deficiencies and soil fatigue.

Public investments in the form of labour subsidies can ameliorate the situation and help in reviving the health of natural resources in rainfed areas. Improving soil health is an asset building process and is a public good.

The stagnant prices and global competition are the greatest impending threats to forced displacement of people from rainfed areas. Also, it is important to absorb increasing labour costs to enable the rainfed agriculture to be economical and sustainable; and for it to sustain livelihoods of people at the margin.

NREGS is a unique opportunity in this regard. Many of the labor intensive soil health restorative practices like green leaf manuring, green manuring, composting, and tank silt application can come back into the system. Integrating labour components in rainfed farming systems with NREGS will benefit the purpose of employment guarantee as it opens up non-earthwork related employment opportunities for a large labour force who do cannot do manual hard earth work.

Rainfed FS Components that can be integrated into NREG:

The critical labour oriented works in rural areas can be categorized into four types namely

(i) Manual earthwork / physical work

(ii) Preparation of products

(iii) Provision of services and

(iv) Critical farm operations that can catalyse change processes. There is a need to enlarge the scope of NREG to accommodate all types of above works as per details given below:

a) ***Manual earth work:*** The normal earthwork like digging of compost pits, tank silt application, farm ponds etc., can be taken up in NREGS without any policy changes.

b) Preparation of Products: These are project based group initiatives. For e.g., few land less (aged) women as a group can take up large scale composting using biomass from commons with some infrastructure facilities. While their wages are covered under NREGS, they would have substantial quantity of composted organic manure in 4 or 5 cycles. This manure can be sold to eligible rainfed farmers at a cheaper rate. The proceedings can help in surplus generation. Several such inputs – like bio-pesticides, horticulture plant material, biomass production for energy so on, can be generated locally with local inputs that would help in improving the agriculture productivity.

c) Provision of Services: Several critical services like group support to tending cattle, protecting plantations in the commons, pest-surveillance etc., are critical to sustaining rainfed farming. To illustrate, wage labour dependency is a greatest limiting factor for poor to keep livestock, the only source of asset building. Support to a group of household in the form of tending of cattle (allocation of labour) would help all of them to keep livestock and to diversify their income. Similarly, good pest-surveillance would save half the effort and investments in pest control. Support for sustaining bullocks for about 3 months during summer period would bring-back bullocks into farming systems that may save substantial diesel consumption. With some creative engagement, systems can be designed for decentralized renewable power generation. Such critical services can be supported under NREGS.

d) Supporting Critical Operations to catalyze sustainable technologies: Because of labour intensity, some of the sustainable, high productive technology options are not taken up by farmers. System of Rice Intensification, for example is not catching up because of labour intensity in weeding. Support for two weedings in the whole package would encourage many farmers to take to this method of rice cultivation that saves about 20 to 30% water, while increasing crop yield.

The above group based support systems for rainfed-farming systems can be systematically designed for integration into NREGS. Group based wage-entitlements (defined per unit) for

conversion to sustainable rainfed farming systems can be the operational framework. It can also attract other complementary finances in the form of credit. Operationally it can be built on the platforms of community based organizations and Gram Panchayats. The cost norms, payment and measurement systems can also be easily developed.

This process would affect large scale transfer of resources to the poor in a large stretch of rainfed areas in the country by making their agriculture economically viable and through gainful productive employment. The restorative effect on the ecological systems would be substantial. This is a process that can realize the vision of inclusive growth of the XI five year plan.

Watershed programs and NREGS works are operated parallel in several situations. Provisions should be made in the watershed programs to re-adjust the budget heads if some works are already been taken up by NREGS.

BOX: ***Labour Allocation can be a Driver for Change:***

Many traditional sustainable practices in soil health management have become out of practice as the labour costs increased. There is a trade off between subsidies for chemical inputs and labour inputs. Green revolution technologies chose the former, but these technologies 'have run their course'. Labour based support systems would be the necessary corrective and provide stimulus to the rainfed agriculture economy.

Loss of nutrients applied through chemical inputs

	Units	Quantity	Usage*	Wastage
			49%*	51%
Total N consumption	Thousand tons	15603	7645	7957
Total N Subsidy	Rs. In crore	11054	5416	5637
Subsidy on per kg N (approx)	Rs. / kg N	8.5 to 9.5		
Subsidy on per kg N+P+K	Rs. Per kg	8.42		

Data source: Economic Survey, 2005-06,
values for the year 2005-06 (budget estimate up to Nov 2005)
*Reference: Ghosh S.K.(1994)[1],
24% of the total N is used by the plant and the rest contributes to nitrate pollution

The subsidy per kg of nitrogen is Rs.9.63 per kg N. Assuming 49% of the N used by the plants rest of the nitrogen leached into the soil would be of the order of 7957 tones annually. Interestingly Rs.5637 crores (of the total 11,054 crores total subsidy on N) of annual subsidies to N, mostly in the form of urea is lost and contributes to nitrate pollution in ground water; an amount more than the total annual investments on the entire watershed program in the country!

By extending the same amount of subsidy for composting and other methods of building soil organic matter, soil health can be substantially restored. The use efficiency of the external inputs would be increased if soil has adequate organic matter.

Similarly the working group on NRM for the X five Year Plan estimated the annual saving of diesel due to draught animals at approximately 23.75 million tones. With a small percentage of such savings ploughed back into maintaining draught animals as subsidy, the

[1] Ghosh S.K (1994), 'Impact of land and water resource degradation on agriculture production' in Deb DL (Ed), Natural resources management for sustainable agriculture and environment, Angor Publishers, New Delhi

negative trend of faster decline in bullocks can be reversed, with much savings on the oil front. Pest management, soil health, biomass regeneration, livestock productivity and other serious areas of concern can be effectively addressed through labour support and promoting sustainable agriculture practices on a wider scale.

The National Rural Employment Guarantee Act provides a unique opportunity in this regard. Extending labour subsidies for sustainable practices in Rainfed Farming also serves the cause of guaranteeing employment as it opens up a wide array of productive work opportunities for people who are desperately in need of employment but cannot do manual earthwork.