

# ‘Research can make or break rainfed farming’

What are the problems facing smallholder farmers in drought-prone areas of India? Can research contribute solutions? Dr Y.V. Malla Reddy of Accion Fraterna (AF) Ecology Centre argues that agricultural research needs to change move away from its current focus on high-tech solutions for irrigated cash crops.



**Dr Y.V. Malla Reddy** is the director of Accion Fraterna (AF) Ecology Centre in Anantapur, India. He has been with the organization for 35 years, having started as a grassroots worker to finance his evening studies in law. Malla Reddy has served on government commissions on farmers' welfare at both state and national level, including commissions conducting research into the rising numbers of farmer suicides. Malla Reddy earned a doctorate in human resources management at Sri Krishnadevaya University, Anantapur. He was awarded a Fulbright Fellowship of the Indo-American Environmental Leadership Programme (IAELP), and studied agriculture and drought management in the US in 2006.

### **AF Ecology Centre is an agricultural NGO working in southern India. What is the situation for farmers there?**

We work in Anantapur district in the state of Andhra Pradesh. The farmers we work with are smallholders who own less than ten acres of land. Their situation is precarious because of the twin problems of drought and poverty. Anantapur is the second most drought-affected district in the country. Yet agriculture there is predominantly rainfed; only 10% of farms are irrigated. The majority of farmers cannot earn a living from what their farms produce, so they have to work part-time as labourers for middle-class farmers or for government programmes such as the National Employment Guarantee Programme. On average, Anantapur district is struck by drought in three out of every five years. In those years the yield is typically only a quarter of what would count as a proper harvest.

### **What is AF Ecology Centre doing for these smallholders?**

We work with 60,000 small farmers from 230 villages. We try to help them go back to ‘the agriculture of our forefathers’; that is, to natural, sustainable and organic farming methods that have been adapted to present conditions. We want to free agriculture from high-cost high-tech methods, using big machines and polluting chemicals, and we want the farmers to have control over the production process. Our vision is to see that small farmers working rainfed land are free from distress and the environment free from polluting chemicals. This is quite the opposite of what is generally happening with agriculture in India today.

Agriculture on the Indian subcontinent is increasingly mechanized, high-tech and chemicals-based. Cash crops and monocrops are the order of the day. Ninety percent of farmland in Anantapur is now covered by groundnuts. But monocropping is bad for the health and long-term productivity of the soil. In recent years the groundnut harvest has been disappointing, due to drought, but also because of declining soil fertility. And plant diseases are becoming more difficult to control as the insects' resistance to pesticides grows.

We strongly believe that large-scale, highly mechanized monocropping is not what small farmers in drought-affected areas need. In fact, it is mindless. Small farmers cannot afford to invest in big machinery, chemical pesticides and fertilizers. When harvests fail, farmers are left with enormous debts that they are unable to pay off. Many farmers become severely depressed, and we are now witnessing the devastating consequences. Between 1998 and 2003 more than 500 farmers in Anantapur committed suicide. The district still has one of the highest rates of farmer suicide in India. That shows the depth of the crisis in farming in Anantapur.

#### **How can research contribute to your work and to the lives of farmers?**

AF Ecology Centre supports a Low External Input and Sustainable Agriculture (LEISA) approach to farming in drought-prone areas such as Anantapur district, where 90% of farmers are smallholders. The focus must be on developing low-cost, integrated, sustainable farming systems and achieving food security at the household level. This requires a lot of groundwork and a favourable policy environment, and indeed also a lot of relevant research and development.

At present, agricultural research in India is highly biased toward irrigated crops such as wheat and rice. It has very little relevance to the problems of rainfed agriculture and particularly those of smallholders, whose situation is almost totally neglected.

So, first of all, we need research that prioritizes the drought-prone, poverty-stricken areas. Questions that need to be answered include: which crops and practices withstand droughts and low rainfall, and which breeds of livestock are most appropriate in these areas? Which short-duration crops will do well in areas where the rainy season is only a maximum of four months? How can the poor soils in these areas be improved and their nutrient value enhanced to reverse the detrimental impacts of years of monocropping? We at AF Ecology Centre are already working with farmers to promote LEISA. We focus on crop diversification, biomass rebuilding in the soils and

biological control of pests and diseases. It may involve a little more work for the farmers, but it saves them from having to make large investments, and from the risks of borrowing money at exorbitant rates of interest. And it is much friendlier to the environment.

#### **What do you think of current approaches to research?**

I think research should shift its focus to specific local contexts. India needs research carried out from the perspectives of the people, many of them with little education, who have to eke out a living from dry and marginal lands. If research keeps aiming at further mechanization and high external inputs, these small farmers will be the definite losers. They will be forced to leave the land, but they have no other options for earning a living. The cities do not offer a dignified future for illiterate or semi-illiterate farmers.

Research that focuses on improving the livelihoods of farmers must look at the possibilities of integrated and sustainable farming systems: with mixed crops, backyard livestock, poultry and fisheries as additional sources of income to achieve day-to-day food security. Research must address what local breeds of livestock perform best in arid regions and are a source of milk and meat. Famous exotic breeds such as Jersey cows and Murrah buffalo are not necessarily the best animals for the dry regions of India.

We lobby the government and agricultural research institutes to encourage them to think from the local perspective and to prioritize their research themes differently. We need an alternative approach to the present dominant paradigm. It is an uphill struggle, but a crucial one, because the research that is done today may develop agriculture, but it will destroy the lives of many farmers.■

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- AF Ecology Centre: <http://af-ecologycentre.org>
  - Centre for Information on Low External Input and Sustainable Agriculture: [www.leisa.info](http://www.leisa.info)