

Green revolution as a solution? My reflection to Tsegaye Tegenu's article

I read your interesting article posted in Aiga and indeed it has a very good piece of information that would be useful to policy makers. Of course, having said that, I do want to raise little concern on the issue of green revolution. As you mentioned it already, the initial concept of green revolution was based on boosting yield using high yielding varieties, mainly wheat, maize and rice, expansion of irrigation infrastructure, and distribution of hybridized seeds, synthetic fertilizers, and pesticides to farmers. There was no limit to the rate of fertilizers and pesticides as long as yield tends to increase and nobody was raising the issue of ecological balance and health. The expansion of the green revolution was begun in Mexico by the late Dr. Borlaug in 1943 and judged as a success by the Rockefeller Foundation that sought to spread it to other nations. Apparently many Asian countries including India began to spread the Green Revolution program mainly based on plant breeding, irrigation development, and financing of agrochemicals.

But later people came to recognize that the green revolution of the Asian model could lead to increased production to a certain limit, but due to change in land use pattern and wide use of mono-cropping schemes, land quality has gone down and yield has eventually suffered. Due to heavy chemical fertilizer inputs, land has become hard and carbon material has gone down. Due to heavy use of herbicides, extremely problematic weeds were evolving. Pests which were easily controlled by bio-degradable methods have become resistant to many pesticides and now these chemical pesticides have become non-effective. Most importantly, due to heavy use of chemical pesticides, insecticides and fertilizers, the Asian nation lost many birds and friendly insects and this is a big loss in the long term, not only to Asia but to the whole world. Water points were contaminated as a result of the excessive use of pesticides and put human health at risk. Water tables have gone down due to lack of proper water harvesting systems. As a result of use of the newly introduced genetically narrow based varieties, older varieties (landraces) were gone forever.

We can still list numerous issues that concern us and argue, but as your point of argument is so positive, I would simply forward some comments as a point of departure to your discussion. I think there is no simple solution to countries where farmers are ploughing hills and sloppy farms (like many parts of North Ethiopia and the Ankober area) that are not suitable to modern agriculture and green revolution (as to its original definition). It is useful to combine efforts emanated from different disciplines including agriculture, health and water engineering. Integrated pest and soil management is useful instead of totally depending on the use of excessive pesticides and herbicides as their consequences are so serious and have long term effects on biodiversity and human health. Family planning is also of paramount importance to avoid shocks and improve nutrition of the households. Farmers should get access to markets and credits. Participatory technology development projects should be developed including participatory plant breeding as technology adoption will be straightforward afterwards. The household water management effort being in place in many parts of the country should be strengthened and should be supported by modern approaches. In general, as the situation in our country is so complex, no single solution can easily overcome the rooted problems we have within our communities. Thus, an integrated approach should be sought.

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