

NEEDED: A SECOND GREEN REVOLUTION IN GOJAL, GILGIT-BALTISTAN, PAKISTAN

**Prepared By: Michael and Judie Bopp
in Conjunction with the HiMaT team of KADO
(Karakorum Area Development Organization), Aliabad**

MAY 2013

For as long as historical memory can reach back, agriculture has been the foundation of livelihood for the people of Hunza. Although life was hard in past times, for the most part people were healthy. They had enough to eat, and they lived long lives. In those days, people practiced organic farming because that was all there was. “Modern” agriculture had not yet been invented.

Many improvements in life starting in about 1970 through the intervention and assistance of AKDN institutions. Education was promoted, health awareness and medical services were introduced, and many infrastructure and agricultural improvement initiatives were introduced, especially through the work of AKRSP.

It was through the work of UNDP, AKRSP and other intervening groups that the “green revolution” came to Hunza. The green revolution involved the introduction of “modern” agricultural knowledge, methods and technology coming from America and Europe, such as engineered seed varieties, chemical fertilizers and pesticides, and farm machinery to supplement hand tools.

The results seemed nothing short of miraculous. Crop yields doubled and tripled. Cash cropping replaced subsistence agriculture and the income of farmer soared.

A primary cash crop for most Gojal farmers was potatoes. By the mid 1980s thousands of tons of potatoes were sold each year in down-country markets. From this cash crop, a newfound prosperity enabled many Gojal families to send their children to high school and university, to invest in other businesses such as cattle trading or tourism, and to achieve levels of “comfortability” (i.e., having enough) that had previously been unknown. What almost no one realized is that all this prosperity was coming at an unexpectedly high cost.

The Crisis

Between 2008 and 2010 a series of disasters struck the Hunza region. The first was the 2008 global financial crisis, which caused the cost of farm inputs such as fertilizer, pesticides, fuel and other transport costs to double, and in some cases triple. At the same time food prices soared, making the basic cost of living rise to levels that plunged many families into hardship.

In 2009, a cold summer and early winter caused massive crop failures across much of Gojal. Then, in January 2010, the Attabad landslide disaster completely blocked the Hunza Valley, causing the Hunza River to back-up and form a new lake some 400 feet deep and 30 kilometers long.

This disaster completely covered a huge section of the Karakorum Highway (KKH), which was the one and only road link for Gojal people with down-country markets. Suddenly, 500 families lost their farms and homes due to flooding and became internally displaced people (IDP's). As well, the cost of transport increased astronomically,

because every bag of potatoes had to be trucked to the new lake, loaded onto boats, and off-loaded again onto trucks at the landslide site. It now cost almost two times more to produce and transport potatoes to market than they could be sold for, thus leaving most Gojal farmers without a viable source of income.

In summary, Gojal had been transformed, basically overnight. from a prosperous region to one in which upwards of 80% of families are living in poverty.

Food Security

A key indicator of the current level of poverty in Gojal is food security. The following table shows community estimated food security figures for 2013 expressed in the number of months the food that people grow, or are able to purchase lasts, before they need to get food aid in order to survive.

No. of Months of Food Security	MASO Households	GRSO Households	CLSO Households	Food Quality
0-4 months	75%	40%	51%	Basic survival (low nutritional levels)
5-7 months	15%	40%	35%	Some variety of food
8-12 months	10%	20%	24%	Relatively balanced nutrition

Similar figures were collected for 2011-2012 through a participatory research methodology.

First “Green Revolution” Consequences

What most people didn't realize is that mono-cropping potatoes and the heavy use of chemical fertilizers and pesticides had seriously depleted the quality of soil in many parts of Gojal. It had been requiring more and more chemical inputs to produce fewer and fewer potatoes. As people experimented with more traditional crops such as wheat, it soon became obvious that the soil was seriously depleted.

To sum up, Gojal is now experiencing a severe agriculture and food security crisis. New solutions need to be found.

The Global Context

Another reality that many people in Gojal are not aware of is that the entire world has been experiencing a food and agriculture crisis during the same period. Food shortages in many countries have not been effectively addressed by industrial-scale agriculture using green revolution methods. At the same time, it was becoming clear that 90% of the world's farmers are small landholders, most of whom have seen a massive collapse of their agricultural success due to soaring input costs after 2008, as well as the negative effects of climate change, the depletion of growing lands due to the over use of chemical inputs, changing market conditions and the lack of sustainable farming methods.

In Mexico in 2003 more than a million farmers conducted coordinated demonstrations across the country focused on a World Trade Organization (WTO) meeting being held in Cancun to protest the dumping of cheap American corn (maize) on the Mexican market, a practice that had utterly destroyed local markets and the livelihood of hundreds of thousands of poor farm families.

In many African countries, a related combination of climate-induced droughts or destructive monsoon rains and flood, high input costs, depleted and burned out soil from overuse of chemical fertilizers and regional conflicts have plunged millions of rural families into extreme poverty.

In India, similar conditions have driven millions of farm families into such a state of desperation that between 2011-2013 there have been more than 10,000 reported farmer suicides, often carried out by eating toxic chemical fertilizer or pesticide. Sometimes whole families have died together in this way. One of the most volatile triggers of the “Arab Sprung” revolutions that have swept the Middle East (Bahrain, Egypt, Syria, etc.) has been a food crisis.

In short, what is now being experienced in Hunza (especially Gojal) is also being experienced in many countries around the world.

Response

In response to this global food and agricultural crisis, a wave of new international research programs have been developing and testing new, more sustainable and ecologically friendly solutions to agricultural production.

What has emerged from this work across more than 40 countries (including Pakistan) has been a new conceptual framework for understanding how agriculture needs to be renewed in order to be both ecologically sustainable, as well as sufficiently productive to meet the food security and market needs of local populations.

Following is a brief summary of the results of this work.

1. ***A shift toward organic and ecologically friendly agricultural methods*** (ecological) is needed. This requires
 - shifting to natural organic, non-toxic fertilizers and pesticides;
 - developing and shifting to seed varieties that have not been engineered and patented by corporations, and from which farmers are able to reproduce their own seed stock;
 - shifting to sustainable (organic, non-toxic) soil care and management;
 - the use of water conservation strategies; and
 - shifting to crops and cropping strategies that enhance production and improve rather than deplete soils and control pests and weeds (planting a diversity of species in the same growing area, crop rotation, selected companion cropping, the integration of bushes and trees in agricultural plots, effective integration of livestock into farming systems, etc.).
2. ***Ecologically friendly agriculture integrates traditional ecological knowledge (TEK), and farmer experience*** from the past within modern sustainable agriculture innovations and methods to develop specific, very localized solutions through participatory research and partnerships
3. ***As well this step requires the creation of farmer-owned and farmer-driven alliances*** as local and area platforms for organizing research, learning and implementation of solutions.
4. ***Another key is the development of working partnerships*** between farmers, scientists, experts and agricultural departments and agencies, oriented toward

developing and implementing sustainable agricultural solutions tailored to specific local conditions.

5. **Findings:** By using these approaches, farmers across 40 countries have been able to significantly increase agricultural production (yields) by as much as two and even three times and almost universally increase market outcomes and farm incomes to levels that significantly surpass outcomes from the first Green Revolution agricultural approaches.

Creating Made-in-Gojal Solutions

In July 2011, a learning and action forum was held in Kyber, Gojal, Hunza. This forum was organized by the HiMaT Indigenous Leadership and Development Program of KADO. Participants of the Kyber forum analyzed the food and agricultural crisis in Gojal, and called for nothing short of an “agricultural revolution”. HiMaT-KADO subsequently organized a series of small farmer schools to begin a search for solutions.

In April 2013, a Farmer’s Forum on Sustainable Agriculture brought together some 90 farmers (men, women, young and old) from across Gojal. At this forum the following critical decisions were made.

1. Gojal farmers will work together to create a “**second green revolution**” that will seek a shift toward sustainable agricultural methods for addressing food security and agriculturally based prosperity.
2. Participants agreed to form a **Gojal Farmer’s Alliance**. This alliance will serve several functions:
 - a. to coordinate research and farmers’ learning, leading to the implementation of sustainable agricultural outcomes, and
 - b. to create a cooperative buying and selling mechanisms as well as financial services to serve farmers needs.

Initially, this work will be coordinated collaboratively by GOLSON and the LSOs of Gojal, with the technical support of KADO-HiMaT and the department of Agriculture of the Karakorum International University (KIU). It is anticipated that start-up of the Gojal Farmer’s Alliance and with its clear goal of launching a “new green revolution” rooted in organic and sustainable approaches will require much careful planning, experimentation and hard work, but also that this initiative will attract great support from outside Gojal as the movement gains momentum and begins to show real results.

Implication

What has happened is that Gojal farmers have decided not to wait any longer for professional agencies to bring solutions from outside Gojal. “We have waited long enough. It’s time we stand on our own two feet, and draw on our own strengths,” one of the community leaders counseled. All the farmers agreed.