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The Western World's Dependence on Third World Farmers

Farmers in the Western World continue to rely on ancient seeds from Third World farmers for ongoing agricultural sustainability. Most of Alberta's grain crops emerged from crop domestication that occurred up to 10,000 years ago in their centre of origin located in Central Asia; an area that contains what is referred to as Third World countries. During the last few decades, modern plant breeders have greatly improved crops by adapting them to various climatic conditions by means of genetic crossings, building in tolerances to environmental pressures and pests as well as greatly favouring yield. As removed as these new seeds may seem from their centre of origin, reliance on ancient seed cannot be denied.

"The Western system favours genetic uniformity, focusing heavily on yield for international trade; however, the crop production of Third World farmers is mostly for subsistence and regional trade," says Neil Whatley, crop specialist with Alberta Agriculture and Rural Development, Stettler. "Carrying out traditional agricultural practices, Third World farmers successfully cultivate genetically diverse, farmer-selected crops that are much lower yielding, but favour traits for pest resistance and strong root systems, making them very important to these farmers who use few capital-intensive inputs. These crops are referred to as farmer varieties or landraces."

In an industrialized farming system, to control pests, for example, science develops synthetic inputs for crops as well as inserting pest resistant genetic material into high yielding crops by crossing with landraces. The landraces used by less capital-intensive farmers in the Third World are ideal sources for this genetic material. According to the Food and Agriculture Organization of the United Nations, crop genetic diversity is mostly concentrated in farming regions of the Third World.

"There has been a trend in recent decades to conserve seeds from landraces in seed banks – facilities where temperature and humidity are artificially controlled," says Whatley. "This manner of conservation is very important. However, due to being confined in a seed bank, landraces are no longer subjected to dynamic interactions with soils, climates and

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This Week

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pests in their natural habitats. On the other hand, on-farm landraces produced by farmers in the Third World stay in continuous contact with natural co-evolutionary processes, assuring them to be tolerant to harmful diseases, insects and to other emerging environmental factors."

Whatley recently attended a conference where crop botanist and author, Gary Nabhan, spoke about his new book ***Where Our Food Comes From***. Nabhan suggests that the future of food depends on tiny seeds in orchards and fields the world over. Whatley comments that he was particularly intrigued by one area of the world that Nabhan spoke about. Elaborating on the clever plant selection knowledge carried out by indigenous farmers in the Pamir Mountains of Afghanistan and neighboring Tajikistan, Nabhan explained that these mountainous farms are sources for numerous landraces responsible for the successful breeding of early-maturing varieties of wheat, lentil and chickpea in the West – genetic material in grain varieties that continue to be cultivated by us to this day.

These genetically diverse, farmer-selected crops used in the Third World provide genetic material tolerant to pests and adaptable to varying soil and climatic conditions encountered both in the Pamir Mountains and the Canadian Prairies. Nabhan explained that the small farms where these seeds are derived have been functioning sustainably for millennia.

"This deep knowledge of farmer-selected crops is one of the many positive characteristics that ought to be appreciated about cultures in the Third World, as well as being something that farmers everywhere gratefully depend upon for their own long-term farming well-being," says Whatley. "I have found from my own experiences working in Third World agricultural development that remote areas do exist where farm families may seem poor but are extremely rich in knowledge about their local crops and, due to this, they live sustainably and comfortably."

As Nabhan commented, "We must honour and support these farmers just as much as we support seed banks, for they do essential frontline work, just as the seed banks serve as essential backup."

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Technology, Direct Seeding and Sensible Crop Rotations

Using new technologies, practicing sensible crop rotations and direct seeding are three big steps towards a more profitable bottom line.

"The common canola-wheat-canola-wheat 'rotation' requires a lot of cash inputs and is risky now that clubroot has been found in many parts of the province," says Nick Underwood, Reduced Tillage LINKAGES, Grande Prairie. "Good crop rotations are the foundation of good agronomy, and there are cost savings to be had when legumes are added to them. Legumes fit in well in a direct seeding or zero till system. Field peas, and sometimes faba beans, are common legumes in a straight cropping business. Clovers for seed, or alfalfa, also can be included."

The fertilizer cost for the wheat-canola rotation is approaching $150 per acre or $450,000 on a 3000-acre farm. If 25 per cent of those acres are put in a legume, $100,000 or more can be saved in the first year. Nitrogen additions can be reduced by 20 or 30 per cent following the legume, meaning that $450,000 bill could soon become $250,000.

"The above example probably oversimplifies my point, but there are large benefits to having a good rotation," says Underwood. "There is no substitute for good agronomy that looks after and improves the soil."

"Another big help towards improving your profit margins can be to take advantage of new technologies," says Underwood. "For instance, with aid of GPS, satellite photography and GPS yield records, it is possible to identify the regions of your fields that have different productive capacities. If you have been yield mapping during harvest you may already know the areas. When soil tests are taken in the different areas a fertilizer 'prescription' can be applied at variable rates. With the multi-tank air carts available today it is possible to apply different rates of major nutrients in different parts of the field. This can lead to considerable savings that will soon pay for the extra equipment needed and help produce more economical crops with a better margin."

Some other suggestions to help the bottom line:

- include fall-seeded and perennial crops to reduce weed control costs as well as to spread the workload
- using pre-seed burn-off herbicide can cut the cost of in-crop spraying in some situations
- a pre-seed weed burn-off is essential and inexpensive
- in-crop spraying is more effective early in the window rather than late, and may allow rate reduction and increase yields

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"New technology combined with sensible crop rotations and direct seeding can be real helps towards more successful crop production," says Underwood.

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FAO Now Offering Umpire Network

As of November 1, 2008, the Farmers' Advocate Office (FAO) partnered with the Alberta Arbitration and Mediation Society (AAMS) to provide rural Albertans with enhanced mediation and arbitration services. This partnership is a winning arrangement for both organizations and will be known as the ***FAO Umpire Network***.

"AAMS is a self-regulated organization that is providing the FAO with a roster of professional accredited mediators and arbitrators with a specialty in rural issues, says Graham Gilchrist, Assistant Farmers' Advocate, Farmers Advocate Office, Edmonton. "AAMS wanted to expand their rural roster and the FAO has an increasing demand for cost effective dispute resolution services as an alternative to litigation and have limited staff available. Providing more availability to professional mediators and arbitrators strengthens our service to rural Albertans, which the FAO continually strives for."

In order for the FAO to provide this qualified service to the rural communities, it is necessary to access funding for this project. Fortunately, the Agricultural Policy Framework (APF) funding panel sees the value of providing dispute resolution services to rural Alberta. The APF also realizes how this service supports Alberta Agriculture and Rural Development's business plan. This pilot project will be assessed at the end of the funding term on March 31, 2009.

Since this project is an APF funded service that has limited to no cost for the client, there will be provisions set around appropriateness of a file being carried forward to the ***FAO Umpire Network***. Clients will need to contact the FAO to invoke any of the mediation or arbitration professionals on the roster or in the FAO for their service.

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Value Chain Network Aims to Improve Business Collaborations

Collaborate to compete – which means bringing every part of a supply chain into alignment to enhance a business's competitive position.

"Alberta businesses looking to give their business a boost and learn how to profit from partnering may want to consider looking into provincial value chain programs available," says Margurite Thiessen, value chain specialist with Alberta Agriculture and Rural Development. "A network of provincial value chain programs hopes to encourage greater collaboration between companies in the agriculture and food supply chain by offering programs, such as ***Customer Focused Collaboration-Mastering Value Chain Implementation,*** this fall and winter."

The program (being held in Burnaby, B.C. on February 24 to, 26 2009, and in Winnipeg, Manitoba on March 2 to 4, 2009) offers a chance for farmers, food processors, distributors, retailers and others to gain knowledge and develop skills that will held them identify and create successful strategies and solutions for developing value chains.

David Parker of ABG Inc. will facilitate this program where participants will network in a highly interactive environment designed to advance the application and management of value chain capabilities. Program guest speakers will also include: Bill Dover, Nicole Schroth and Terry Ackerman, and each of these speakers will bring a wealth of experience and knowledge from the agriculture and food supply chain.

"Value chain approaches and business collaboration are widely recognized as a leading-edge business strategies," says Thiessen. "The strategy requires that every link in the chain create value for the end consumer. No one link – retail, supply or producer – can go it alone, and the risks and benefits are shared among all chain members. The aim of a value chain is to realign the agri-food chain to the end consumer where the emphasis is on value creation and innovation.

"Value chains have proven effective when companies need to collaborate to improve quality, increase systems efficiencies, or develop differentiated products to achieve a more rewarding position in the marketplace."

Albertans interested in this training opportunities, can contact an Alberta Agriculture and Rural Development value chain representative. Information on this program is also available on the Agri-Food Council's website at www.agfoodcouncil.com or Alberta Agriculture's website at www.agriculture.alberta.ca.

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Agri-News Briefs

Managing Livestock Manure Fact Sheet

If proper manure management practices are followed, animal wastes can be utilized as a valuable nutrient resource rather than treated as a waste. Manure is an excellent "organic" fertilizer containing nitrogen (N), phosphorus (P), potassium (K) and many other essential nutrients. A new fact sheet, ***Managing Livestock Manure***, recently posted to the Alberta Agriculture website, provides valuable information on how to store manure, and how and when to apply manure. The fact sheet can be viewed and downloaded by visiting the publications section at www.agriculture.alberta.ca/publications.

Water, Agriculture and the Environment Conference

The Water, Agriculture and the Environment Conference is being held in Lethbridge on November 27 and 28, 2008. The conference deals with a central question, can agriculture maintain access to quality water supplies with the pressures of population and industrial growth? Currently, conference registrations have already been received from members of the irrigation industry, government agencies, municipalities, engineering firms, health industry, financial industry, nonprofit groups and various others. Registration cost for the conference is $200 per person. For further information or to register, contact Lloyd Healy at 403-382-4407, e-mail lloyd.healy@gov.ab.ca or visit the conference website for online registration at www.cwra.org/services/CANCIDConference/ConferenceRegistration.aspx.