Deepening our Engagement in the Production Sphere

Our primary mission is to open new sales channels for producers to reach out to overseas markets, so that they can sell their crops directly to end-users, like they do across North America. We believe these new channels would help producers diversify to higher-value crops that yield higher-margins. This will also lessen our grain-sector's dependence on bulk-trades, which face increasing competition in world-markets that we fear will further squeeze producer-margins in the future.

Direct-sales channels not only benefit our producers but also overseas buyers – millers, processors, and other end-users. They can procure specific crop varieties or grades generally not available through bulk-channels, improving the quality of their own products. They can get those crops delivered to their door-steps in containers, with product integrity intact, and as necessary, identity-preserved. While getting the specific crops they need, they may even realize cost savings from direct-deliveries.

Direct-channels are widely utilized across North America, not just domestic but also in cross-border trades: either producers reaching out for direct-sales opportunities, or corporate buyers actively procuring from multiple production sources. But these channels are not commonly used, if at all, in overseas export-trades, hindering producers' ability to specialize and shift to higher-value crops, as well as buyers' ability to procure what they need. As to the reasons, we must reflect on history.

Our grain-export system was built on a single-desk model, at a time when grain transport was much more cost-effective in bulk. With the dissolution of that system, both Canadian Wheat Board and wheat-pool assets were privatized. These were highly capital-intensive acquisitions; new owners found themselves heavily invested in fixed-assets (inland and coastal terminals) with a vested interest, if not a necessity to continue to utilize them, perpetuating the bulk-dependence of our grain-exports.

At that juncture global transportation supply-chains were rapidly containerizing, enabled by advances in intermodal-systems and their declining costs. Many of us also saw the containerization potential in grain-trades. While these trades were containerizing across Europe, and in time Asia, not much attention was paid to facilitate the same in North America. While containers were returning empty to Asia across the Pacific, pulling them inland to the Prairies for grain-trades proved difficult.

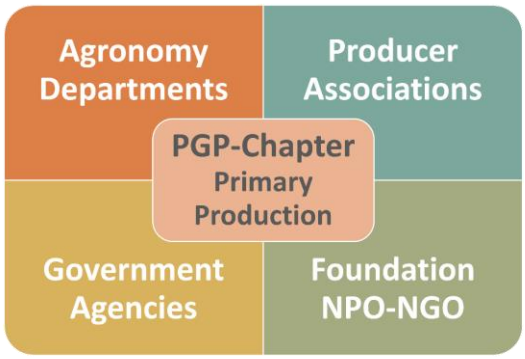
As we discussed in our earlier articles, this was not an insurmountable challenge, even back then, and now is even more feasible. There is enough empty capacity to increase containerized grain-exports by more than 10 MT now. The real challenge, however, is facilitating direct-sales channels to attract overseas buyers. To this end, our immediate priority is recasting our image in overseas markets: the world knows us for bulk-trades, not for our primary production sources, from which they can buy a huge variety of crops and get them shipped to their doorsteps in containers.

For this purpose, we developed a 6-prong framework to promote Prairie interests in overseas markets – to provide visibility into this highly advanced grain economy and thereby attract buyers to procure grains directly from production sources. Five of these promotional-prongs are aimed at extolling the virtues of the primary grain-production sector, at the core of which are *advanced-farms*, the focus of our *farm-profile* program. However, we must go beyond the virtues of individual-farms to other elements of the *grain-ecosystem* that support these primary production-units.

The "ecosystem" concept we introduced in our last article was to present a more holistic view of the grain economy, with a multitude of stakeholders we wanted to draw into our orbit to support our trade-facilitation mission. In this article, we focus on the primary-production chapter of that ecosystem to mobilize support from its constituents, four main stakeholder groups that we identified in our previous article:

- Agronomy Departments: Primary production units rely heavily on the region's research-capacity, be it in increasing their yields, improving crop-quality, or diversifying crop-mix. We want to promote this capacity through a series of *case-studies* prepared in cooperation with leading agronomy-departments.
- Producer Associations: We are looking for support and participation from crop-commissions or producer-associations to prepare a series of *crop-profiles* (by type, grade, and variety) to demonstrate the region's remarkably diverse crop-base – production and export volumes, historical trends, and future projections.
- Government Agencies: Even with all the market and trade liberalization, grains remain part of the food-chain and subject to regulations from seeding to growing to handling to export. We are hoping to work with all public agencies involved to convey the *quality-assurance* virtues of our grain-chain, production to export.
- Foundations-NPOs: As we face an imminent climate-crisis, sustainability is of great concern, with several NGOs paying close attention to the issue. To our credit, it appears that Prairie-agriculture has become a carbon-sink. We want to draw attention to this in extolling our grain-economy's *sustainability-record*.

In this article we focus on these four elements, with the intention of returning to *farm-profiles* next to address the challenges we face in rolling out this program.



Agronomy Research Capacity

Farming-enterprises are the primary producers and our core constituency. We extol their virtues through *farm-profiles* and cast them as the primary source of grains importers can buy from. But farms do not operate alone in the primary-production sphere: they draw on the support of many other elements of the grain-ecosystem. As important as what happens in the fields is the support-systems behind the scenes; we give as much credence to these elements as farms in recasting our global image.

The general perception of farmers is as practitioners in the field, far removed from science-and-technology. They do uphold family-farming traditions, and tend to be cautious and conservative, but they closely follow advancements in science and technology. They keep a close eye on the latest seed-strains, fertilizer-varieties, new methods-and-practices, or other advances. Even if they hold back for a crop-year or two, they always come back to follow the successes of their neighbors.

In the US, the role of science-and-technology in agriculture was recognized by the *Founding Fathers*, gaining momentum in the first half of the 19th century, leading to the first agriculture-college in Michigan in 1855. Agricultural-and-mechanical (A&M) movement got a boost with the Morrill Land Grant Acts (1862 and 1890). Many prominent applied science-and-engineering faculties of today can trace their roots back to agricultural colleges, at least land-grants passed in the cause of A&Ms.

The roots of agriculture in our region's universities go back to their early years, late 19th century in Manitoba and early 20th century in Saskatchewan and Alberta. In fact, University of Saskatchewan started as an agricultural college, but even in the other two, agriculture was among the founding or early colleges. In time, agronomy – loosely defined as science-and-technology of agriculture – became a core discipline in all post-secondary institutions across the region with applied research capacities.

Though US universities might have had a leg up in bringing A&M traditions into their curricula, our institutions were quick to catch up to the frontiers of knowledge in this domain; in fact, in many ways we are leading the world in applied research, be it in seed-breeding, adaptation to soil conditions, or advancing farming methods. Many farmers actively participate in applied research projects, or at least benefit indirectly from them through the seeds, fertilizers, pesticides, or chemicals they purchase.

The same way as our research-capacity is available to producers, it is accessible to those interested in procuring grains from our production-sources. They can consult with research-institutions for advice on where to find the type of crops they need, and if interested in entering advance-contracts, what regions to go to and what to look for in the way of seed-varieties and farming-methods to achieve the grade and quality standards they want – options not even relevant through bulk-channels.

The image we want to project to global audiences will carry the following messages, presenting the Prairies as a leading agricultural-region where farmers have access to the latest scientific knowledge, and work hand-in-hand with highly qualified experts.

Institutions: There are a dozen or more universities and colleges in the region, all with active agricultural research programs and labs at the service of the grain-economy. They have top-notch resources and are well funded through endowments and government agencies, provincial and federal. They are not only renowned academically but also actively engaged in hands-on applied research efforts in the fields – they have been instrumental in driving the advances in Prairie-farming.

Seed varieties: There were numerous contributions from the R&D sphere to Prairie agriculture, but probably the most significant were from the crop-genomics domain. Advances in seed-strains and their adaptation to local soil conditions contributed greatly to yield and quality improvements. Also, we saw significant benefits from drought-resistant seeds in the last crop-year; though it still turned out to be a poor harvest, it was nowhere near as bad as the last drought-year a decade earlier.

Growth conditions: Agronomists are also involved in field-operations by providing guidance to farmers with respect to crop-choices most suitable to varying soil conditions across the region, as well as best-practices in seeding, fertilizer-chemical applications, and harvesting-methods. The hugely successful effort in turning the region into a prime-source of pulses on the world stage was the result of close collaboration between agronomists, producers, and governments working together.

Sustainability: The scientific community is also active in furthering the cause of sustainable-agriculture, now with evidence that Prairie agriculture has turned into a carbon-sink, obviously a great feat in combating global-warming. The region is blessed with irrigation-free-farming, but with the help of the scientific community both resource-requirements and carbon-emissions are closely monitored to ensure that the sustainability-record is not just maintained but continuously improved.

The portal-section devoted to extolling our region's cutting-edge research capacity in agronomy will be structured into three tabs under the above titles. The main tools we will use to put these strengths across are ***case-studies*** *but we will also provide dedicated pages to give sponsors or stakeholders a chance to promote themselves.*

Diversity of our Crop-Base

Our grain-economy has a very diverse crop-base, in fact one of the most diverse in the world. But overshadowed by the fact that most of our crops are exported in bulk (85% of grain-exports through the West Coast), and two staples, wheat and canola, account for 75% of export volumes, our crop-diversity remains a well-kept secret. The *farm-profiles* we intend to post may set this record straight, but not sufficiently, as they will not portray the full extent of our crop-varieties in the aggregate.

The first thing to recognize is that we always talk about what we export, but our production volumes are double that. If anybody cares to investigate the mix of what we produce, they will find much greater diversity. Naturally, we have the flexibility of producing more of what we consume domestically, thus export more of the same. But we cannot expect overseas buyers to discover this diversity on their own; the onus is on us to present profiles of what we are capable of producing and exporting.

Another problem is our reputation as an all-purpose wheat-exporter. The fact that this crop, which we have an excellent reputation for, represents half of our export volumes is not a problem in and of itself. There are many wheat varieties and grades we can (in fact do) produce, including ones discerning importers are willing to pay a premium for. But this kind differentiation does not seem to be in the interests of bulk-traders that are driven by volume; more of the same suits bulk-interests best.

Thus, we have a formidable task facing us in promoting our capacity to produce and export much greater variety and grades of crops, at least to increase our export prospects through direct-sales channels. In theory, the data for this purpose is available at the producer level, but not very practical to assemble. Instead, we hope to get the support of crop-commissions that possess the same data, as they are paid from the sales of their respective crops – wheat, barley, canola, pulses, etc.

This data also resides with the Canadian Grain Commission (CGC) but we hope to work with the grain-commissions for another reason. These are the creatures of the post-CWB era, funded through crop-sales, in fact producer-associations run by officials elected by their members, thus representative of their constituents. Thus, rather than CGC, it makes more sense for the *crop-profiles* we intend to assemble for export-promotion purposes to have the stamp of approval of producer-associations.

Also, with these profiles we hope to go beyond aggregate volumes by crop-category. We intend to provide importers with greater insights into what we can produce at a much finer level – by type, grade, or quality. We are much more comfortable working with producer-associations in promoting the interests of their members. We are hoping that what our core followers, producers, are interested in, value-driven export initiatives, will also be endorsed and supported by their associations.

Our objective in this vein is to portray the diversity of our crop-base, not just the varieties across major crop categories but also specific grades of each that are available or could be grown under contract to buyers' needs or requirements.

Staple crops: Wheat and barley used to be our board-crops exported through the Canadian Wheat Board. Since the dismantling of this single-desk monopoly, wheat remained our principal export-crop, now down to 50% of our grain-exports, but still, all in bulk. We intend to focus our efforts to specific grades of wheat, especially durum that we are well known for, but we also believe that our somewhat neglected barley varieties deserve more attention, mainly aimed at brewing and distilling.

Coarse-grains: We also have a much greater variety of coarse-grains in the offering, particularly oats and rye but also others – already grown but mostly for domestic and US markets. We see significant potential for these crops in global feed and food chains – specific crops or special purpose mixes exported in container-lots. We will try to bring more attention to these domains, particularly high-value types or grades, by targeting food-processing, breakfast-cereal, animal-feed as well as other markets.

Oil-seeds: Among oil-seeds by far the most significant volume we grow and export is canola; we are the largest grower and exporter of this crop in the world. There is little growth potential in canola, and now the industry is looking for alternative uses like bio-fuels. But recently soybeans have been getting a lot of interest, with grade and quality differentiation as a value-proposition. We will pay a lot of attention to soybeans, together with flax and other oil-seed varieties that are in high demand.

Pulses-lentils: The discovery of our potential in this ancient-crop domain has been the greatest value-proposition to our producers – dry beans, dry peas, lentils, and chickpeas. This has become a well-served segment of the grain-economy, with containerized-exports by industry leaders with global reach. It may not need us as much as other grain-segments, but we will pay as much attention to this domain as it deserves, to facilitate new export channels to geographical markets that we target.

In addition to these major categories, there are many other crop grades and varieties available from our region, including niche-products like wild-rice and organic-of-anything. We must convey this crop-diversity to prospective buyers through ***crop-profiles*** *on what we grow and export, as well as opportunities for contract-orders.*

Systems to Ensure Crop-Quality

We have an excellent reputation for the quality of the grains we export in bulk, based on the quality of crops we produce, classification-systems we developed, and the quality-control systems our grain companies have in place. At the receiving end of the bulk-trades, buyers get what they purchase, consistently and reliably without any worry over the quality standards being met, be it wheat, canola, barley or other.

Now we are calling for a shift to direct-sales, not because what we export in bulk is of poor or inconsistent quality, but there are inherent limits to crop differentiation or specialization through bulk-systems. The value proposition we see in direct-sales and container-deliveries lies with crop varieties or grades with specific attributes that buyers are willing to pay a premium for. Rather than growing more of the same with low margins, producers ought to turn their attention to these high-end markets.

In an article we posted recently, we examined export prospect to China's wheat-flour industry. Unlike in the past, there are no prospects for wheat-exports in bulk, but a great deal of promise in selling specific grades of wheat or durum, delivered in weekly container-lots to flour-mills. But as in any other type of specialty-crop sales with specific attributes, buyers must be convinced of the quality and consistency of what they will be getting in every container delivered to designated mill-locations.

Clearly, quality-assurance is much more important in direct-sales, particularly at the high-end of grain varieties and grades where buyers are paying a premium for crop-attributes. Our grain companies have an established reputation in global markets that what they export in bulk is of consistent quality. In container-trades, the quality assurance challenge is more onerous, but the onus is still on sellers (i.e., producers or their agents) to convince buyers that they will be getting what they ordered.

We are known for not only our grain-classification systems but also our accredited testing-reporting labs that uphold export standards and ensure that buyers are getting the types and grades of grains they purchase. These procedures that our grain-companies had long internalized equally apply to producers (or their agents) that shoulder the export-burden. Every container-load of grain exported is subject to inspection, and if required, even more stringent identity-preservation regulations.

We have an elaborate institutional capacity to closely regulate the grain industry, not just over quality-standards but also health-and-safety. There is the *Canadian Grain Commission* with broad ranging oversight, inspection, licensing, and reporting responsibilities. Also, there is *Agriculture and Agri-Food Canada*, a ministry with a broad policy and regulatory mandate over agriculture across the entire production, processing, and marketing spectrum. Overseas buyers can be assured that whatever they import is to the same quality standards as what we consume domestically.

The role we shoulder on behalf of our core constituency, grain producers, is to extol our region's virtues in quality-assurance, based on the strengths of our regulatory system with a broad mandate over the grain sector, including what it exports.

Regulatory heritage: Over the last two decades we have been actively privatizing and liberalizing our grain-industry, thus there is a perception that the government is out of the way. But deregulation pertains to markets, not health-and-safety; the grain-chain is tightly regulated from all angles to uphold quality-assurance standards along the entire chain, from production to handling to exporting. Importers can take comfort in the fact what they buy in containers is as secure as our bulk-channels.

Health-and-Safety: Grain is part of the food-chain, thus subject to the same health-and-safety regulations as anything we eat. The entire production process, from seeding to harvesting to storage, are subject to regulations; inspectors may not reside on farms, but farmers have long internalized rules, standards, and practices, and are often inspected to ensure full compliance. Also, regulations extend to grain-handlers, with every piece of equipment subject to health-and-safety rules.

Trade Licensing: Grain traders or exporters are also included in the regulatory-net, licensed through the *Canadian Grain Commission*. Producers are incentivized to sell through licensed exporters as that is the only way they get insurance-coverage. Any grain-trade we facilitate or get involved in will be through licensed-parties. Also, there are government-certified labs involved in testing and issuing reports on all grain-exports, as well as a variety of channels engaged in routine inspections.

Grain Classification: Our systems have long been in place and served as templates for most parts of the world. The original emphasis was on wheat and barley (board-grains) but with the shift to other crops, they have been expanded with even more detail with crop-attributes – our soybean standards truly stand out in differentiating our grades. Most importantly, our identity-preservation rules and procedures are also outstanding, and of course are of crucial importance in containerized trades.

It would be hard to find another jurisdiction in the world where buyers can be more confident of the rules-and-regulations governing the grain-industry. They can count on ***quality-assurance*** *along the entire grain-chain, growth to handling to exporting. Buyers should not worry about any of this, as long as they rely on credible channels.*

Prairie's Sustainability Record

Many agricultural regions around the world are forced to make desperate efforts to increase their output – encroaching on forests, degrading soils, drawing on depleting water-sources, burning fuel using aging machines, or blindly applying fertilizers and pesticides, all with no regard for the natural habitat. While agriculture worldwide has consequential environmental impacts, often overlooked in the cause of food-security, Prairie agriculture has a sustainable-record that we can be proud of.

In the Prairies, despite all the mechanization and introduction of huge machines, fuel consumption has declined because of operational efficiency improvements – in seeding, fertilizer-chemical applications, and harvesting. In fact, our farms are now absorbing more carbon than they emit – the farm-economy, at least at the primary production end, has become a carbon-sink. Despite significant crop yield-increases and rising output-levels, green-house-gas emissions have declined by more than half.

Improvements in soil conditions are also staggering; now the Prairies face little or no danger of soil degradation. Zero-tillage has increased from less than 10% to more than 50%, with potential to go all the way to 100%. Prairie-farming relies on rain for its water-supply; despite Canada's abundant freshwater reserves there is little if any need for irrigation. While critics are still obsessed with GMOs, less fertilizers and pesticides are used, with a notable shift to environmentally friendlier substances.

While the region's grain output has increased significantly over the last few decades, the farming-footprint has remained the same with no encroachment on forests or wetlands – not noticed but there are plenty of both to the north of the farm-lands. There are even more yield-increases on the horizon, perhaps as much as 2-3% a year, barring a worse global climate effect than feared – mostly a net contribution to exports as per capita domestic grain consumption is expected to stay the same.

Even if yields remain the same, we will be making a notable contribution to the global food-supply, 40-50 MT a year, and all without increasing the global carbon-footprint, at least from the production end. Whatever yield increase we can achieve, our contribution to the global food-supply will grow at double that rate. This is not something any other grain-growing region can tout from an environmental perspective – certainly not emerging ones, and not even other advanced ones.

The only downside to our future from a sustainability perspective, is the planned shift from food to fuel in the use of our second largest crop, canola. This is a horribly misguided move when there are so many other renewable energy sources, and we could be switching to alternative crops to contribute to food rather than fuel supply. If this plan materializes, it will be a black-mark on our sustainability record; however, we believe producers will have the wisdom to switch to higher-margin crops instead.

Our role here is to draw on research reports or articles published on the topic to convey the sustainability record of the Prairie grain-economy, as we believe these achievements will be very helpful in promoting grain-exports in overseas markets.

Agronomy Community: As we noted earlier, the research community at large is dedicated to the sustainability cause in agriculture as part of the global efforts in combating climate-change. Across all streams of research – seed-varieties, soil-conditions, farm-inputs, and methods – carbon emissions, soil degradation, and other environmental impacts are paid close attention. We will try to be a conduit that connects the research community to our followers – producers and buyers alike.

Government Agencies: There is no shortage of work done in the cause of fighting climate-change and promoting sustainability in a broader sense – not just through Environment Canada but also other ministries and public-agencies. We have no capacity to take on original work in this domain, but as much as we can, we will try to post short-pieces to reflect on findings relevant to sustainability in Prairie agriculture – also, we welcome any support to our efforts in promoting the region.

Global NGOs: The interest in agriculture used to be mainly through a food-security lense, be it in the cause of fighting hunger or promoting healthy-diets – both important agendas from the perspective of the Prairie grain-economy. Even of greater urgency now is fighting climate-change. We will not be shy about promoting our grain exports from a sustainable if not carbon-neutral base, over those regions that grow more crops by encroaching on forests or wasting scarce water-resources.

Local Foundations: While many other NPOs or NGOs also pay close attention to sustainability in agriculture, the work sponsored by the Canada West Foundation stands out in documenting the sustainability-record of Prairie agriculture. We will draw on this work, as well as future studies they sponsor, to present the virtues of becoming a carbon-sink through energy-conservation and emission-reduction efforts, as well as in soil-preservation and land-conservation (forests and wetlands).

We are in the process of compiling two reports in this domain, but our promotional efforts will draw primarily on external sources through abstracts we post. Also, we will solicit sponsored portal pages or sections from research-centers, government agencies, and NPOs/NGOs on the ***sustainability-record*** *of Prairie agriculture.*