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## Can Small Farmers Survive?: Problems of Commercializing the Milk Value Chain in Pakistan

Erum Sattar  
*Tufts University, Boston*

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COMMERCIALIZING THE MILK VALUE CHAIN IN  
PAKISTAN: CAN SMALL FARMERS SURVIVE?  
*Erum Sattar*

# **Towards Industrial Dairy Farming in Pakistan: The End of Small Farms and the Transformation of Cattle-Rearing Practices**

Erum Sattar\*

## **Abstract**

Milk in Pakistan is infused with the self-understanding of a nation. British colonial administrators laid the modern-day foundations of the country's structure through land grants to small farmers. In an agricultural country where nearly forty percent of the population remains food insecure, rearing animals is a way of life in the rural areas where milk remains an important source of animal protein. Selling the daily surplus that families don't consume is a significant source of earnings for cash poor families – and here an unprecedented change is taking place within dairy management and milk procurement systems. The scale of this change is significant as is its ability to connect even the smallest of dairy farmers to the milk buying habits, shaped by sophisticated marketing campaigns, of middle-class buyers in the country's burgeoning cities. The significant changes underway are the result of the actions of large multinational and national companies - including the entry of the commercial arm of the military in the commercialization of the milk value chain - paying cash to small farmers. These operations, which may at first seem symbiotic, in connecting rural sellers to urban buyers, are in fact placing significant pressures on farmers to increase the size of their holdings as well as to improve their breeding stock by moving towards improved (meaning imported) higher yielding

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\* Lecturer (Program Lead, Core Class Instructor and Water Diplomacy Track Leader), Sustainable Water Management program, Friedman School of Nutrition Science and Policy and Institute of the Environment, Tufts University; Adjunct Professor, Elizabeth Haub School of Law, Pace University; S.J.D., Harvard Law School (2017); LL.M., Harvard Law School (2010); LL.M., Queen Mary, University of London, (2008); LL.B., University of London (2007); Member of the Bar of England and Wales and The Honourable Society of Lincoln's Inn (2010). This article grows out of research on the Indus river basin over the past several years for the Harvard Water Federalism Project under the Harvard Water Security Initiative. A draft of this paper was presented at a Harvard Law School workshop, 'Animal Agriculture, From the Middle East to Asia', Sponsored by the Harvard South Asia Institute, Harvard Law School Animal Law & Policy Program, and Harvard Law School Islamic Legal Studies Program: Law and Social Change as well as at the workshop in support of this special volume at the University of Arizona James E. Rogers College of Law. I thank the participants of both workshops for their suggestions and take responsibility for any omissions and errors.

cattle varieties. While national and provincial governments with the support of international development partners promote the dairy sector as contributing to rural, economic and national development, I argue that a strategy driven by efficiency will ultimately lead to the demise of those very same small livestock and agricultural farmers it aims to uplift. This is because the logic of commercializing the milk value chain through the operations of large Milk Procurement and Marketing Companies (MPMC's) and the pressures to increase milk yields and herd sizes requires consolidation and financing – options that are mostly available to richer and larger farmers. Is modernized milk collection already moving beyond its reliance on collecting milk from dispersed small farms? The unfolding pressures carry with them the effects of increasing demand for all inputs, including consolidated land, water and feed operations which in turn have significant implications for small farmers, animals and the environment. With small farmers reliant on the income from the sale of milk that ties them to a system that may come to no longer need them, can we foretell the demise of small farms? I suggest that these insights are particularly relevant for the study of rural, economic, social, national and international development.

*"You are assisting the poor of Pakistan and this helps us fight  
the root cause of  
extremism and terrorism."*

- President General Parvez Musharraf on the opening of  
Nestlé's milk factory<sup>1</sup>

### I. Background

Let me recount an anecdote from a field visit<sup>2</sup> to a model Nestlé<sup>3</sup> farm in Punjab province of Pakistan.<sup>4</sup> A hardworking, educated young farmer who spoke good English and wore jeans had

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<sup>1</sup> Kabirwala, *Nestlé Opens New Milk Factory in Pakistan, Its Largest Milk Reception Plant in the World*, Nestlé (Mar. 16, 2007), <https://www.nestle.com/media/pressreleases/allpressreleases/milkfactorypakistan>. At the inauguration outside Lahore, Pakistan of Nestlé's largest milk plant in the world when General Parvez Musharraf was President of the country, "Nestlé opens new milk factory in Pakistan, its largest milk reception plant in the world." *Id.*

<sup>2</sup> See Communique, *Friends of Democratic Pakistan Summit Meeting Concluding Statement by the Co-Chairs*, U.S. DEP'T OF STATE (Sept. 24, 2009), <https://2009-2017.state.gov/p/sca/ci/pk/friends/131015.htm>. This portion of the research was conducted along with the Friends of Democratic Pakistan (FODP), a consortium of Pakistan's largest donors formed after the resumption of democratic rule in 2008 to help achieve development priorities, and the Harvard Water Security Initiative's Water Federalism Project. *Id.* See generally Jonathan Shaw, *The Water Tamer*, HARVARD MAGAZINE (Jan. – Feb. 2012), <https://harvardmagazine.com/2012/01/the-water-tamer>.

<sup>3</sup> Nestlé is one of the two largest dairy companies in Pakistan. See *Nestlé Pakistan Sells Pasteurized Milk in \$23 Billion Market*, EDAIRYNEWS (Feb. 27, 2015), <https://edairynews.com/en/nestle-pakistan-sells-pasteurized-milk-in-23-billion-market-42185/> [hereinafter *Pasteurized*]. It took over operations of the older local MilkPak Pakistan Ltd. *Id.* The other main local conglomerate, Engro Pakistan (now FrieslandCampina Engro) (Engro), emerged after the majority share buyout by the Dutch conglomerate of the local Engro Foods Ltd. Jim Cornall, *FrieslandCampina Completes Engro Foods Deal*, DAIRY REPORTER (Jan. 5, 2017, 10:23 GMT), <https://www.dairyreporter.com/Article/2017/01/05/FrieslandCampina-completes-Engro-Foods-deal>. For details of the corporate takeover, see generally *Our Brands*, FRIESLAND CAMPINA, <https://www.frieslandcampina.com/about-frieslandcampina/our-brands/> (last visited Oct. 27, 2020).

<sup>4</sup> A "province" is the equivalent administrative unit to a "state" in the U.S. *Resource Library: Encyclopedia Entry*, NATIONAL GEOGRAPHIC, <https://www.nationalgeographic.org/encyclopedia/province/> (last visited Oct. 27, 2020).

returned to Pakistan after a degree in computer science from the United States. His parents had money to invest so he bought land with access to a road network and partnered with Nestle to become a bulk milk supplier. He saw commercial milk operations as a profitable business venture and initially targeted a herd size of 50-100 buffaloes and cows.<sup>5</sup> He had plans to grow and improve his herd with imported varieties and artificial insemination. Nestle was very proud of his farm and showcased him to visitors as a model farmer,<sup>6</sup> certainly more affluent and educated than the average dairy farmer<sup>7</sup>. To demonstrate his commitment to Nestle's recommended infrastructure and cattle rearing practices, he'd installed large ceiling fans which periodically dispersed cooling mist in the well-ventilated cattle sheds. He had two biogas pits to produce electricity from dung, which gave him uninterrupted electricity,<sup>8</sup> to power the farm's tube well<sup>9</sup> and the 6 split air conditioners in the farm office. Because he had access to investment capital, he could take advantage of Nestle's assurance that the company would buy all the milk volume he could produce through increased herd size and yields. The question for us is whether this model farmer is representative of the bulk of livestock and small farmers in the country who would find anything close to such expenditure beyond their reach. Also, what does presenting such a commercially minded farmer as a 'model farmer' reveal about the operations of large private-sector national, and international dairy marketers more broadly, as well as the implications of the dairy value chains they are creating.

Two large foreign milk and dairy conglomerates, the Swiss Nestle and the Dutch FrieslandCampina, are Pakistan's largest

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<sup>5</sup> Milk from both buffaloes and cows makes up the bulk of commercial milk sales in Pakistan. UMM E. ZIA ET AL., *DAIRY REPORTS: DAIRY DEVELOPMENT IN PAKISTAN 2* (2011), available at <http://www.fao.org/3/a-al750e.pdf>.

<sup>6</sup> NESTLÉ, *CSV REPORT OF NESTLÉ PAKISTAN LIMITED: TOGETHER WE CARE 24–29* (2014), available at [https://www.nestle.pk/sites/g/files/pydnoa361/files/asset-library/documents/financial\\_reports/nestle\\_ar\\_2014\\_csv.pdf](https://www.nestle.pk/sites/g/files/pydnoa361/files/asset-library/documents/financial_reports/nestle_ar_2014_csv.pdf) [hereinafter *CVS NESTLÉ*]. Nestle is funding a project of the NGO, the Dairy and Rural Development Foundation (DRDF) to upgrade 100 farms on a 50% cost-sharing basis to model farms. *Id.* at 28.

<sup>7</sup> See Samrina Akhtar et al., *Management Profile and Contribution of Livestock in Poverty Alleviation and Nutritional Improvement in Peri-Urban Areas of Faisalabad*, 45 *PAK. J. AGRI. SCI.* 381, 381–82 (2008). A study conducted in suburban areas of Faisalabad, Pakistan's third largest city, found that just over 58% of dairy farmers were illiterate. *Id.*

<sup>8</sup> Shahzeb Jillani, *Power Cuts Hit Pakistan's Economy*, *BBC NEWS* (July 15, 2011), <https://www.bbc.com/news/av/world-asia-pacific-14164825>. Reliable regular electricity is far from the norm with power blackouts colloquially known as 'loadshedding' prevalent in both urban and rural areas. *Id.*

<sup>9</sup> A well with a submersible pump to access groundwater.

formal sector providers of milk.<sup>10</sup> Together the two companies control approximately 90% of Pakistan's formal dairy value chain.<sup>11</sup> Providing a rationale for the work that the foreign dairy conglomerates are doing. Nestle, for instance, claims that by “developing progressive dairy farmers (medium scale) into commercial dairy farmers (large scale)” it is “contributing to achieving Sustainable Development Goals (SDGs) 1 and 2 (No poverty and Zero Hunger) which aim at poverty reduction, ending hunger, achieving food security, and promoting more sustainable agriculture.”<sup>12</sup> Let us take a closer look at the development of Pakistan's dairy sector to assess the extent to which this particular form of market development, and the global language of economic and social development that is used to justify it, is warranted in the country's case.

## II. Introduction

What we saw that day was certainly not the norm for the majority of Pakistan's dairy farmers and animals, whether local buffaloes or cows (local, imported, or improved through AI), where about 84% of rural households have between 1-4 dairy animals.<sup>13</sup> The bulk of milk consumed in the country is from indigenous breeds of riverine buffaloes, approximately double that of cow's milk: 58% to 35%.<sup>14</sup> Even though Pakistan is the world's fourth largest producer of milk after China, India, and the U.S.,<sup>15</sup> with a stock of approximately 48 million heads of buffaloes and cows.<sup>16</sup> Only 7% of farms report having what may be considered a large farm, 50 head of

<sup>10</sup> Kazim Alam, *Of Loose Milk and Tight Margins*, DAWN (Mar. 17, 2020), <https://www.dawn.com/news/1541158>.

<sup>11</sup> *Id.*

<sup>12</sup> *Nestlé Empowering Farmers with Best Farm Practices*, NESTLÉ PAKISTAN (Apr. 23, 2018), <https://www.nestle.pk/media/newsandfeatures/nestle-supporting-farmers-to-become-leaders-in-agriculture> [hereinafter *Farm Practices*].

<sup>13</sup> Abdus Sattar, *Milk Production in Pakistan*, PIDE BLOG (Mar. 1, 2020), <https://pide.org.pk/blog/milk-production-in-pakistan/#:~:text=Average%20household%20holdings%20are%202,2006%2D07%5D%20in%20Pakistan>.

<sup>14</sup> Omer Farooq, *Agriculture, in PAKISTAN ECONOMIC SURVEY 2008–09* 17, 33 (Pak.), available at <http://www.finance.gov.pk/survey/chapters/02-Agriculture09.pdf>.

<sup>15</sup> Abdul Rehman et al., *Livestock Production and Population Census in Pakistan: Determining Their Relationship with Agricultural GDP Using Econometric Analysis*, 4 INFO. IN PROCESSING AGRIC. 168, 168 (2017).

<sup>16</sup> GOV'T OF PAK., AGRIC. CENSUS ORG., AGRICULTURE CENSUS 2010: ALL PAKISTAN TABLES (IN ACRES) tbl. 11.4 (2010), [hereinafter AGRICULTURE CENSUS 2010], available at [http://www.pbs.gov.pk/sites/default/files/aco/publications/agricultural\\_census2010/Tables%20%28Pakistan%20-%20In%20Acres%29.pdf](http://www.pbs.gov.pk/sites/default/files/aco/publications/agricultural_census2010/Tables%20%28Pakistan%20-%20In%20Acres%29.pdf).

cattle.<sup>17</sup> Further, given that milk yields are low, 5-6 times less than what are achieved in the developed world,<sup>18</sup> cattle holdings are relatively dispersed and dairy is embedded in the fabric of daily rural life. In fact, 80% of the milk in the country is produced by either rural commercial or rural subsistence producers, 70% of that is produced by subsistence farmers.<sup>19</sup> At the same time, given this particular form of dairy abundance, imports continue to rise as domestic demand outstrips supply.<sup>20</sup> Pakistan is the largest importer of formula milk in the world.<sup>21</sup> When looked at more closely, what imports reveal is that there is a shift from fresh milk towards manufactured dairy products (both liquid and powdered). The large commercial dairy marketers, in addition to their sale of packaged milk brands, are also at the forefront of promoting the sale of manufactured dairy products.<sup>22</sup> One explanation is that having these products in their portfolios allows them to target customers at lower price points which they've recognized as being potentially highly profitable since milk's price (both fresh and packaged) continues to make it unaffordable for a large segment of the population.<sup>23</sup> As per Nestle's research, this group earns between \$2-8 a day.<sup>24</sup> We must of course recognize that it is precisely the practice of selling manufactured dairy products that undercuts the price of fresh, raw, and loose milk. This is because milk now has to compete against a product that can be manufactured at a lower cost, and to state the obvious is not milk but a substitute. It is this segment, fresh raw milk after all, that the companies see as their real competitor.<sup>25</sup>

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<sup>17</sup> Umm E. Zia, *Pakistan: A Dairy Sector at a Crossroads*, in SMALLHOLDER DAIRY DEVELOPMENT: LESSONS LEARNED IN ASIA 76, 76 (Nancy Morgan ed., 2009), available at <http://www.fao.org/3/a-i0588e.pdf> [hereinafter *Crossroads*].

<sup>18</sup> Sattar, *supra* note 13.

<sup>19</sup> *Crossroads*, *supra* note 17, at 76, 80.

<sup>20</sup> See generally Muhammad Naeem Tahir et al., *Current Standing and Future challenges of Dairying in Pakistan: A Status Update*, in MILK PRODUCTION, PROCESSING AND MARKETING (Khalid Javed ed., 2019), available at <https://www.intechopen.com/books/milk-production-processing-and-marketing/current-standing-and-future-challenges-of-dairying-in-pakistan-a-status-update>.

<sup>21</sup> *Dairy Industry in Pakistan*, PAKISSAN.COM (Sept. 17, 2017, 5:12 pm), <https://www.pakissan.com/2017/09/17/dairy-industry-in-pakistan/>.

<sup>22</sup> See Marylou Andrew, *Milk in the Time of Opportunity*, AURORA (Jan. 29, 2018, 10:36 AM), <https://aurora.dawn.com/news/1141745>. These products may be manufactured using whey, lactic acid, powdered milk or vegetable protein. *Id.*

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> Farooq Tirmizi, *Despite Stellar Earnings, Nestle Pakistan Aspires for Better Results*, THE EXPRESS TRIBUNE (Feb. 8, 2012),

<https://tribune.com.pk/story/333671/despite-stellar-earnings-nestle-pakistan-aspires-for-better-results>. In an interview the former CEO of Nestle Pakistan revealed for instance that, "Take the example of yoghurt. We are 80% of the

Since the country's independence in 1947, the share of agriculture in the GDP has been on a downward trajectory, nevertheless, it remains significant at nearly 20%.<sup>26</sup> Livestock, perhaps surprisingly, is the bulk of the agricultural sector at 60% representing 11% of total GDP.<sup>27</sup> Let's note how remarkable this is for a primarily agricultural country, such that the total value of livestock products is more than the combined value of all major crops including the largest primary commodities of cotton, wheat, rice, and sugarcane.<sup>28</sup> Most farm families obtain 20-25 % of their income from their holdings of 2-3 buffaloes and cows along with 5-6 sheep and goats.<sup>29</sup> These families sell about a third of the milk they produce.<sup>30</sup> Meanwhile, on the consumption side, nearly a third of household income spent on food is on milk and dairy products.<sup>31</sup> About 69% of the irrigated area is in Punjab province which means that it has the most significant share of the country's economy as well as its agricultural base.<sup>32</sup> The milk production too comes from the two largest agricultural provinces, Punjab and Sindh, that together produce 96% of milk.<sup>33</sup> Of this about 73% of milk production comes from Punjab, Sindh contributes about 23%, while the other provinces and areas produce the remainder.<sup>34</sup>

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market when it comes to packaged yoghurt. But that packaged segment is only 2% of the total market, . . . [s]o it doesn't really matter what our market share is. We need to grow the whole packaged segment." *Id.*

<sup>26</sup> Gov't of Pak., Fin. Div., *Agriculture*, in PAKISTAN ECONOMIC SURVEY 2019-20 17, 17 (2020), [hereinafter ECONOMIC SURVEY 2019-20], available at [http://finance.gov.pk/survey/chapter\\_20/02\\_Agriculture.pdf](http://finance.gov.pk/survey/chapter_20/02_Agriculture.pdf).

<sup>27</sup> Gov't of Pak., Fin. Div., *Agriculture*, in Pakistan Economic Survey 2018-19 11, 14 (2019), [hereinafter ECONOMIC SURVEY 2018-19], available at [http://www.finance.gov.pk/survey/chapters\\_19/2-Agriculture.pdf](http://www.finance.gov.pk/survey/chapters_19/2-Agriculture.pdf).

<sup>28</sup> See Muhammad Tariq et al., *Milk Marketing and Value Chain Constraints*, 45 PAK. J. AGRIC. SCI. 195, 195 (2008).

<sup>29</sup> Muhammad Ashfaq et al., *Factors Affecting the Economic Losses Due to Livestock Diseases: A Case Study of District Faisalabad*, 52 PAK. J. AGRIC. SCI. 503, 503 (2015).

<sup>30</sup> See generally Tariq et al., *supra* note 28, at 199.

<sup>31</sup> PETER WYNN ET AL., REPORT ON DAIRY MISSION TO PAKISTAN 5 (2006).

<sup>32</sup> See *A Snapshot of India and Pakistan Agriculture*, KLEFFMANN GROUP, <https://www.kleffmann.com/en/kleffmann-group/news--press/press-releases/a-snapshot-of-the-pakistan-and-indian-agriculture/#:~:text=Punjab%20covers%20about%2069%25%20of,to%20the%20national%20food%20production%20%5Bhereinafter%20SNAPSHOT%5D>, (last visited Oct. 28, 2020).

<sup>33</sup> Sattar, *supra* note 13.

<sup>34</sup> Arshad H. Hashami et al., *Gender Role in Livestock Management and Their Implication for Poverty Reduction in Rural Toba Tek Singh, Punjab-Pakistan*, 44 PAK. J. AGRIC. SCI. 674, 674 (2007).

In the seventh decade of Pakistan's founding, a vast percentage of the population, about 47%, remains dependent on some form of an agricultural income.<sup>35</sup> With an estimated population of approximately 220 million,<sup>36</sup> this amounts to nearly 104 million people. Of this, an estimated 7.5 million families are involved in the livestock sector and depend on the milk they produce both to meet their own nutritional needs and the income they are able to generate from the sale of any surplus.<sup>37</sup> The sector employs between 30-35 million people directly.<sup>38</sup> Approximately 62% of the rural population relies on an agricultural income.<sup>39</sup> The bulk of livestock holdings remain small and dispersed, as farms of less than 5 acres make up 64% of the total farms in the country.<sup>40</sup> Perhaps, more than the sheer size of the livestock sector in the economy, for those dependent on an income from farming, the production and sale of milk is the most significant source of regular income throughout the year.<sup>41</sup> This is because there are two annual cropping seasons, spring and winter.<sup>42</sup>

<sup>35</sup> Rehman et al., *supra* note 15, at 169.

<sup>36</sup> See *Pakistan Population 2020 (Live)*, WORLD POPULATION REV., <https://worldpopulationreview.com/countries/pakistan-population> (last visited Nov. 3, 2020). The census remains deeply politicized in Pakistan and the previous completed census was in 1998. Even though the census is to be repeated every ten years, there was a nearly two-decade gap to the 2017 census. To date, the results of this remain provisional. Muhammad A. Wazir & Anne Goujon, *Assessing the 2017 Census of Pakistan Using Demographic Analysis: A Sub-National Perspective 2* (Vienna Inst. of Demography, Working Paper No. 06/2019), <https://www.econstor.eu/bitstream/10419/207062/1/1667013416.pdf>.

<sup>37</sup> CTR. FOR APPLIED POLICY RESEARCH IN LIVESTOCK, UNIV. OF VETERINARY & ANIMAL SCIS., POLICY PAPER: IMPORT OF MILK & WHEY POWDERS IN PAKISTAN 1 (2017), available at <http://www.uvas.edu.pk/doc/MBA/policy/Import-Milk.pdf> [hereinafter POLICY PAPER].

<sup>38</sup> M. Sarwar, *Dairy Industry in Pakistan: A Scenario*, 4 INT'L J. AGRIC. & BIOLOGY 420, 420 (2002); *Pakistan Livestock Census 2006*, PAK. BUREAU OF STAT., <http://www.pbs.gov.pk/content/pakistan-livestock-census-2006> (last visited Nov. 3, 2020) [hereinafter *Livestock Census 2006*].

<sup>39</sup> Rehman et al., *supra* note 15, at 169.

<sup>40</sup> AGRIC. CENSUS ORG., GOV'T OF PAK., AGRICULTURAL CENSUS 2010: PAKISTAN REPORT, at XLVII (2010), available at [http://www.pbs.gov.pk/sites/default/files/aco/publications/agricultural\\_census2010/WRITE-UP%20AGRI.%20CENSUS%202010.pdf](http://www.pbs.gov.pk/sites/default/files/aco/publications/agricultural_census2010/WRITE-UP%20AGRI.%20CENSUS%202010.pdf) [hereinafter AGRICULTURAL CENSUS].

<sup>41</sup> Farmers are paid for their milk weekly and there is a shift to mobile payments so that some of the downsides of cash payments such as safety concerns can be minimized. See Staff Report, *Milk Payments Mechanism: Easypaisa, Nestle Collaborate to Facilitate Dairy Farmers*, DAILY TIMES (Apr. 11, 2016), <https://dailytimes.com.pk/91261/milk-payments-mechanism-easypaisa-nestle-collaborate-to-facilitate-dairy-farmers/>.

<sup>42</sup> See ECONOMIC SURVEY 2019-20, *supra* note 26, at 17-18. In the spring Kharif cropping season sowing takes place between Apr-Jun with harvesting taking place between Oct-Dec and in the winter Rabi cropping season, sowing takes place between Oct-Dec with harvesting occurring between Apr-May. See *id.*

Farmers and tenant farmers get paid for their crops when they harvest and bring them to market.<sup>43</sup> Thus, the farming calendar makes the regular weekly income farmers can get from the sale of milk necessary for them to be able to meet their household expenses. Landless livestock farmers are even more dependent on their earnings from the sale of milk.<sup>44</sup> In a cash-strapped, debt-burdened rural economy we should not underestimate the impacts of even small amounts of money to effect significant structural transformation.

An analysis of the transformation in the dairy sector that is underway in Pakistan shows that while looked at individually, as on the farm above, each of the expansionary decisions to undertake dairy farming at greater scale is one of efficiency. Leading to higher productivity with increased milk yields from both improved, often imported, breeds and practices.<sup>45</sup> Plus, as the model farmer and company representatives inform a visitor, producing cattle that is better cared for. However, the heart of the structural transformation in the dairy sector that is underway, in which large companies move in to connect livestock and small farmers with urban consumers by being a source of regular income. This is the very process through which the logic of the market may triumph at the cost of those same livestock, small farmers, and landless agricultural workers. Given the pressures on small farmers to consolidate, I suggest that greater infusions of regular payments, which at first glance is exactly what may seem to be what a resource-poor rural economy needs, is the very mechanism by which small farmers are made to feel the need to consolidate. Allowing them to feel the pressures through the transmission of price signals to overcome the small sizes of their landholdings and herds. In essence, to no longer remain small.

In brief summary, there is a massive, structural transformation taking place in dairy production. Along with a growing nexus of rural areas with urban areas and the overall role of the private sector in this structural shift towards a market-based economy. The structural change towards a market-led approach means that Pakistan is well on its way to a capitalist dairy sector. One

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<sup>43</sup> See generally *id.*

<sup>44</sup> See generally Akhtar et al., *supra* note 7, at 384–85.

<sup>45</sup> See generally *Livestock Census 2006*, *supra* note 38, at tbls.15–16. On average, buffalo milk has twice the fat content of cow milk which has an edge as far as consumer taste is concerned. See *Milk Composition*, FOOD & AGRIC. ORG. UNITED NATIONS, <http://www.fao.org/dairy-production-products/products/milk-composition/en/#:~:text=The%20fat%20content%20of%20milk,milk%20is%20about%20%3A1> (last visited Nov. 3, 2020).

with severe, and troublesome, long-term implications for the survival of small-scale dairy and agricultural farmers. The negative effects on livestock health and welfare as the process of ever greater efficiency pressures fall on the most vulnerable, both human and animal. Pakistan is nowhere close to the kind of consolidation of the livestock industry we see in some other countries in this issue. Nevertheless, I suggest that with current trends, and the direction of change, the first hints of such a large structural shift are visible. Surely, once the goal becomes greater yield without a significant regulatory or ethical check developing concurrently, how long can the trend be bucked? The under-appreciated tragedy from a country perspective is that policy-makers are not even asking these relevant questions of the structural changes underway.

To show this transformation in the dairy sector, the article is divided into four sections that taken together describe the forces of change that are underway: (i) the self-understanding of the nation as one based on its rural strength and the British colonial origins of the idea of ‘a nation of farmers’; (ii) the structure of the rural economy that supports milk production at a vast and small scale including the critical work of women in daily dairy management; (iii) how international development finance is enabling the role of market forces in shaping the lives of small farmers together with multinational and national companies to increase yields; and (iv) unconsidered implications for policy going forward.

### III. Imperial rule Creates a Nation of Farmers

To comprehend the self-understanding of a nation one must get a sense of the history through time and place. Modern-day Pakistan boasts the world’s largest contiguous irrigation network, an area covering 45 million acres.<sup>46</sup> The origins of farming in the Indus Basin are to be found in the Bronze-era Indus Valley Civilization centered around Mohenjo-Daro.<sup>47</sup> In the modern era, present-day Pakistan’s agricultural endowment is the result of Britain’s creation of a vast, agricultural landholding and loyal rural class situated primarily in that part of Punjab province in India. The Jewel in the Crown of the British Empire, that upon Partition in 1947, came to Pakistan’s share. This irrigation network remains the basis of Pakistan’s economy and continues to employ nearly half its labor

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<sup>46</sup> See *Indus Basin Irrigation System of Pakistan*, TRIPLE BOTTOM-LINE, <http://www.tbl.com.pk/indus-basin-irrigation-system-of-pakistan/> (last visited Nov. 3, 2020).

<sup>47</sup> See generally MUHAMMAD H. PANHWAR, SIX THOUSAND YEARS OF IRRIGATION IN SINDH 67 (2011).

force.<sup>48</sup> To this day, agriculture accounts for nearly 70% of the country's export earnings.<sup>49</sup> For instance, national development goals envisage it becoming a milk and meat exporter.<sup>50</sup> Despite the sheer scale of the endowment of a rural agrarian base, 36.9% of the population remains food insecure.<sup>51</sup> To date, the country's dismal and regressive social and economic outcomes are grounded in this basic structure of an economy created to serve the ends of a departed Empire.

#### A. *British Rule of India and the Rural Cooperative Moment*

For our purposes, it is important to take account of the long history, going back to the colonial era of rural cooperatives in India when imperial rulers attempted to create them.<sup>52</sup> Under British rule of India, the development of irrigation canals brought water to the previously unirrigated plains of the Indus river.<sup>53</sup> This enabled the settlement of new lands, with new farmers moving west from the densely populated regions of eastern Punjab.<sup>54</sup> At the same time as the canal irrigation project, building the canal colonies was also a colonial-settler project. This helped increase food production in the face of recurring and devastating famines that undermined the credibility of imperial rule.<sup>55</sup> At the height of their development, massive population transfers occurred.<sup>56</sup> According to census figures, nearly 1.5 million settlers moved from Punjab's eastern parts

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<sup>48</sup> *Agriculture Statistics: Introduction*, PAK. BUREAU OF STAT.,

<http://www.pbs.gov.pk/content/agriculture-statistics> (last visited Nov. 4, 2020).

<sup>49</sup> Daniel Workman, *Pakistan's Top 10 Exports*, WORLD'S TOP EXPORTS (Aug. 9, 2020), <http://www.worldstopexports.com/pakistans-top-10-exports/>.

<sup>50</sup> *Chairman Message*, PLDDB, <https://www.plddb.pk/syed-yawar-ali/> (last visited Nov. 4, 2020) (PLDDB stands for the Punjab Livestock and Dairy Development Board); see ECONOMIC SURVEY 2019-20, *supra* note 26, at 14.

<sup>51</sup> MINISTRY OF NAT'L HEALTH SERVS., GOV'T OF PAK., NATIONAL NUTRITION SURVEY 2018: KEY FINDINGS REPORT 38 (2018), available at <https://www.unicef.org/pakistan/sites/unicef.org.pakistan/files/2019-07/Final%20Key%20Findings%20Report%202019%20%281%29.pdf>.

<sup>52</sup> See generally Mihir Shah et al., *Rural Credit in 20th Century India: Overview of History and Perspectives*, 42 ECON. & POL. WKLY. 1351, 1353 (2007).

<sup>53</sup> See generally SAIYID ALI NAQVI, *INDUS WATERS AND SOCIAL CHANGE: THE EVOLUTION AND TRANSITION OF AGRARIAN SOCIETY IN PAKISTAN* (2013).

<sup>54</sup> For an excellent history of the development of the canal colonies of the Punjab, see IMRAN ALI, *THE PUNJAB UNDER IMPERIALISM, 1885–1947* (Princeton Univ. Press 2014) (1988).

<sup>55</sup> In a masterful new study of the East India Company, William Dalrymple has a chapter, "Racked by Famine" that details the mass hunger and suffering British rule caused in India. See generally WILLIAM DALRYMPLE, *THE ANARCHY: THE EAST INDIA COMPANY, CORPORATE VIOLENCE, AND THE PILLAGE OF AN EMPIRE* 215–58 (2019).

<sup>56</sup> See ALI, *supra* note 54, at 8–10.

to the canal colonies of western and southern Punjab in the two decades between 1901-1921.<sup>57</sup> While efforts were made to form and operate “cooperative irrigation societies” after the war in 1920, the experiments failed due to a lack of “harmony among the cultivators.”<sup>58</sup> While the efforts had centered on the sharing of irrigation water, the colonial government learned the lesson and did not attempt to organize rural cooperatives for other purposes either.<sup>59</sup> When it comes to the formation of dairy cooperatives, forces similar to the ones disincentivizing cooperatives for water sharing may be in effect.

#### IV. Shifting Practices

##### *A. Transporting Milk to Cities*

While dairy farmers have always sold their milk to peri-urban areas and cities, with the advent of the MPMC’s milk procurement is becoming more formalized.<sup>60</sup> This, of course, was a key rationale for their introduction as they would be able to bring high-quality milk to consumers. But, as the IFC has recognized, it is difficult to build businesses that bring nutrition to the base of the pyramid consumers.<sup>61</sup> Before we take a closer look at the differences in practice between the informal and formal mechanisms for milk transport, we must note the immense difference in their market shares. To date, after three decades of the introduction of formal dairy value chains, raw unprocessed milk remains between 95-97% of the market while the remaining 3-5% of milk is Ultra High Treated(ment), or UHT, pasteurized and homogenized milk<sup>62</sup> sold by the MPMC’s.<sup>63</sup> In addition to this huge volumetric difference, the substantive differences in their practices are significant as they relate to procurement, handling, storage, transport, and sale.<sup>64</sup> The

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<sup>57</sup> Indu Agnihotri, *The Canal Colonies of Punjab*, 33 INDIAN ECON. & SOC. HIST. REV. 37, 38 (1996).

<sup>58</sup> See ALI, *supra* note 54, at 177.

<sup>59</sup> See *id.*

<sup>60</sup> See GENE MOSES, INT’L FIN. CORP., IFC IN THE DAIRY SECTOR: SPOTLIGHT ON NUTRITION 8 (2017).

<sup>61</sup> *Id.* at 13.

<sup>62</sup> The formal liquid milk category is dominated by UHT packaged milk that without refrigeration has a long shelf-life and only requires refrigeration after a carton is opened. As reliable electricity remains a challenge and fresh milk requires refrigeration throughout the supply chain it is not yet the norm across Pakistan’s formal dairy sector. *Pasteurized*, *supra* note 3.

<sup>63</sup> ZIA ET AL., *supra* note 5, at 17–18, 21.

<sup>64</sup> See generally Natasha Ansari et al., ‘Milk for Milk, Water for Water’: Analysing Pakistan’s Dairy Innovation, IDS BULLETIN (2018), <https://bulletin.ids.ac.uk/index.php/idsbo/article/view/2933/Online%20article>.

traditional *doodh walas*<sup>65</sup> (milk sellers) buy milk either directly from farmers at short distances. More commonly, *dodhis* (milk transporting middle men), who transport milk to peri-urban areas and cities in large metal vats, or more recently plastic containers, without any quality checks or refrigerated transport.<sup>66</sup> Usually, low-quality unhygienic ice may be added to the milk vats to cool and protect it from high temperatures during transport as well as to add to the volume of milk, thereby improving margins.<sup>67</sup> This leads to dilution, as well as problems of contamination given the quality of water used to make ice.<sup>68</sup> Despite these concerns, traditional *dodhis* perform a fundamental, low-cost, and efficient service in transporting milk from where it is primarily produced to where it is primarily consumed.

The MPMC's meanwhile have built a more formalized milk collection chain that embeds farmers and private-sector *dodhis* into a network of milk collection and chilling centers that allows them to check quality, while cooling the milk during transport.<sup>69</sup> Nestle, for instance, collects milk from 190,000 dairy farmers, has 3,500 milk collection centers, and 3,300 chilling centers.<sup>70</sup> By 2014, through its emphasis on checking quality from collection through transport, it lowered microbial and Mycotoxin levels, as well as reduced total milk rejections by 20% over the previous year.<sup>71</sup> Engro, too, has 135,000 farmers from whom it collects milk and has developed a network of 1,600 milk collection centers.<sup>72</sup> In partnership with a major telecom and digital phone service provider it has installed a data collection and payments system at its milk centers to gather quality data, volume data, and make automated payments to farmers.<sup>73</sup>

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<sup>65</sup> *Doodh* is milk in Urdu.

<sup>66</sup> See ZIA ET AL., *supra* note 5, at 11–12, 36.

<sup>67</sup> *Id.* at 11.

<sup>68</sup> *Id.* See generally Asif Kamran & Syed Muhammad Ahsan Rizvi, *Reason and Trends for Using Packaged Milk in Pakistan: Study of Urban Pakistani Consumers*, in 185 LECTURE NOTES IN ELECTRICAL ENGINEERING 909, 909–10 (J. Xu et al. eds., 2013).

<sup>69</sup> See ZIA ET AL., *supra* note 5, at 12, 22.

<sup>70</sup> See CSV NESTLÉ, *supra* note 6, at 24.

<sup>71</sup> *Id.* at 26.

<sup>72</sup> Press Release, Engro Corp., Telenor Pakistan Automates Milk Collection Network in Partnership with Engro Corp (Aug. 12, 2016), <https://www.engro.com/press-releases/telenor-pakistan-automates-milk-collection-network-in-partnership-with-engro-corp/>.

<sup>73</sup> *Id.*

### *B. Managing Dairy Animals for Quality and Yields*

One of the major areas of concern for MPMC's is the safe and hygienic procurement of milk.<sup>74</sup> It is particularly illustrative to see some of the changing practices on farms and the ways market dynamics are transforming animal welfare. In some sense, as will be evident by contrast with some of the other articles in this volume, questions that may arise in other jurisdictions about animal welfare are currently largely absent from dairy development discourse in Pakistan. The driving motivation of MPMC training programs, for the most part, is to increase milk yields. Therefore, dairy animals are, in that framing, important to take proper care of due to their instrumental milk-yielding value. Nestle, for instance, works with its farmers to increase the low milk yields of dairy animals from a given base of 5-6 liters to 10-14 liters.<sup>75</sup> While this is a very far cry from what dairy farmers in developed countries, such as the U.S. or Australia produce. For the farmers who sell their milk by volume, these are large gains.<sup>76</sup> The improved practices for better animal welfare and hence greater milk yield that company representatives impart are a combination of a few simple things. For example, sheltering animals in open sheds, rather than closed brick rooms that retain greater heat. Along with such things as ensuring that during the long hot days of summer, with temperatures routinely crossing 100-plus Fahrenheit, livestock even when tied, have ample leeway to easily reach a water container. Representatives of large milk buying companies explain the parallel to farmers by drawing an analogy to human lactating mothers; just as a breast-feeding mother has to have regular drinks of water to make sure that she produces enough milk to feed her child, so too do their dairy animals.<sup>77</sup>

In addition to training farmers who remain on their own farms to care for their animals in ways that increase yields. The MPMC's have also undertaken programs to train additional people, which is expected to professionalize the quality of human enterprise available to larger sized farms. Tapping into the need for trained human cadres that can help grow herd and farm sizes. Engro, for instance, with funding support from the European Union, other European country development banks, and governments has developed its proprietary Dairy Development Program which has trained male workers as farm supervisors and females as livestock

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<sup>74</sup> See Tahir et al., *supra* note 20, at 8.

<sup>75</sup> See generally *id.* at 8-9, 13-14.

<sup>76</sup> See *id.* at 8-9.

<sup>77</sup> Field visit observations (notes on file with author).

extension workers.<sup>78</sup> In 2019, the program had trained 1,263 workers of whom 35% are female.<sup>79</sup> Nestle, however, has chosen to tackle another problem that stands in the way of larger farm sizes. Mainly, the lack of capital and financing that smaller farmers face in growing their farms to larger sizes, thereby improving their economic returns.<sup>80</sup> The *Kisan* (farmer) Club subsidizes farm inputs, such as chillers, cow purchases, and breed improvement, through helping finance bank loans,<sup>81</sup> or through innovative partnerships for digital micro-finance lending.<sup>82</sup>

MPMC's have also put in place testing and quality assurance checks at the points of collection. They perform various qualitative and quantitative tests at the Village Milk Collection centers, as well as at their Regional Milk Collection centers.<sup>83</sup> "These include organoleptic, temperature, clot on boiling, fat%, solids not fat, total solids, and specific gravity. Tests for aflatoxins, antibiotics, and physiochemical characteristics are performed at RMC to ensure product processing quality and safety."<sup>84</sup> "At the second place during processing or intermediate steps, various systems for quality and safety management, e.g., ISO 9000, FSMS 22000, total quality management (TQM), hazard analysis and critical control point (HACCP), and many other ISO certificates are adopted."<sup>85</sup> Further, the companies have also adopted incentive systems, in the form of payment premiums for the volume of milk supplied, the regularity with which a farmer supplies milk to the company, and for other microbial tests.<sup>86</sup>

One key constraint in raising milk yields is the limitations in the commercial availability of fodder, or feed. Agricultural dairy farmers, in particular, face choices of the amount of their plots on which to plant fodder for their dairy animals as against other cash

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<sup>78</sup> Recorder Report, *European Union Recognises Engro Foods' Dairy Development Programme*, BUSINESS RECORDER (May 28, 2019), <https://fp.brecorder.com/2019/05/20190528481122/>.

<sup>79</sup> *Id.*

<sup>80</sup> *Farm Practices*, *supra* note 12.

<sup>81</sup> *Id.*

<sup>82</sup> *Nestlé Pakistan and Telenor Microfinance Bank Partner to Launch Digital Lending for Farmers*, NESTLÉ (Aug. 7, 2017), <https://www.nestle.pk/media/pressreleases/nestle-pakistan-and-telenor-microfinancebank-partner-to-launch-digital-lending-for-farmers>.

<sup>83</sup> Tahir et al., *supra* note 20, at 8.

<sup>84</sup> *Id.*

<sup>85</sup> *Id.*

<sup>86</sup> *See id.* at 9–10.

and food crops.<sup>87</sup> For livestock farmers the equation, of course, is different given that they rely on purchasing the necessary feed from agricultural markets. Overall at the national level there is a:

15 to 30% deficit in total digestible nutrient requirements for livestock.<sup>88</sup> On average, livestock obtain about 50% of their nutrients from green fodder, 38% from crop residues and the remainder from grazing vacant lands and cropping land post-harvest [in original], and cereal by-products and oil cake/meals.<sup>89</sup> Such estimates highlight the limitations in digestible energy and protein supply at a national level.<sup>90</sup>

Not only is this a major hurdle in raising dairy cattle that produces consistently high yields, but given that these are national averages, more localized research is needed to develop an appreciation of incentives as they operate on the farm level. As the Australian dairy mission pointed out, to sustainably increase yields, there is need for more localized assessments of feed availability for different agro-climatic zones.<sup>91</sup> Without such granular research, it will be difficult to design effective policy that addresses the choices farmers are faced with on a daily basis.

### *C. Women and the Production of Milk*

Women are active workers whose labor and knowledge is vital to the agricultural economy, it employs 67% of the female workforce and they are involved in most tasks from the planting of crops to their harvesting.<sup>92</sup> Small ruminants and animals (goats, buffalo, and, cows) are a part of the household's food basket whose primary care, milking, and feeding duties fall to women along with

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<sup>87</sup> Muzaffar Iqbal & Munir Ahmad, *An Assessment of Livestock Production Potential in Pakistan: Implications for Livestock Sector Policy*, 38 PAK. DEVELOP. REV. 615, 615–16 (1999).

<sup>88</sup> WYNN ET AL., *supra* note 31, at 7.

<sup>89</sup> *Id.*

<sup>90</sup> *Id.*

<sup>91</sup> *Id.*

<sup>92</sup> Ruqayya Khan, *Women in Pakistan Agriculture*, PAKISSAN.COM (Dec. 12, 2018, 9:58 pm), <https://www.pakissan.com/2018/12/12/women-in-pakistan-agriculture/>; see DURRE SAMEE ET AL., FOOD AND AGRIC. ORG. OF THE UNITED NATIONS, WOMEN IN AGRICULTURE IN PAKISTAN 1 (2015), available at <http://www.fao.org/3/a-i4330e.pdf>. Women in Agriculture in Pakistan, *Food and Agriculture Organization* (FAO), Islamabad, Pakistan, 2015, <http://www.fao.org/3/a-i4330e.pdf> [hereinafter WOMEN IN AGRICULTURE].

responsibilities related to other agricultural tasks.<sup>93</sup> Women's role in household and farm livestock management is particularly extensive. Ranging from the daily watering and milking needs of cattle to making and forming the dung cakes to be used as fuel for household cooking. Essentially, working with livestock is seen as an extension of chores related to the household.<sup>94</sup> Meanwhile, about 60% of their work remains unpaid and to correct this disbalance, extensive mobilization will have to be undertaken.<sup>95</sup>

Because of women's involvement in livestock management, development agencies have funded training programs aimed at them by NGOs and private companies.<sup>96</sup> For example, USAID financed the training of 5,000 women as extension workers under its Dairy Project.<sup>97</sup> These training programs are conducted by more formally educated and trained women. This enables easier access by overcoming cultural and communication barriers with the women farmers being trained.<sup>98</sup> As the rationale for the training emphasizes, when women's work becomes the means through which the family can earn a regular income, their status in both the family as well as the community is enhanced.<sup>99</sup> USAID's internal audit of the project found that its targeted material gains along with enhanced incomes for the female extension workers did not materialize because of social and cultural barriers.<sup>100</sup> Clearly, the structural barriers to such development projects are limited. Meanwhile, the actual work of women in the care of livestock continues.

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<sup>93</sup> See SAMEE ET AL., *supra* note 92, at 38–39, 94.

<sup>94</sup> See Ansari et al., *supra* note 64, § 3.1.

<sup>95</sup> Khan, *supra* note 92.

<sup>96</sup> See *Gender Equality and Female Empowerment*, USAID, <https://www.usaid.gov/pakistan/cross-cutting-themes-good-governance-and-gender-equity> (last updated Sept. 28, 2020).

<sup>97</sup> OFFICE OF INSPECTOR GEN., U.S. AGENCY FOR INT'L DEV., AUDIT REPORT NO. G-391-16-002-P, AUDIT OF USAID/PAKISTAN'S SMALLHOLDER DAIRY PROJECT 3–5 (2015), available at <https://oig.usaid.gov/sites/default/files/2018-06/g-391-16-002-p.pdf>.

USAID's Dairy Project aims to “[t]rain and support 6,000 female livestock extension workers on improved farming practices and establish them as self-employed dairy extension service providers.” *Dairy Project*, USAID, <https://www.usaid.gov/news-information/fact-sheets/usaid-funded-dairy%C2%A0project> (last updated July 12, 2016).

<sup>98</sup> See *Gender Equality and Female Empowerment*, *supra* note 96.

<sup>99</sup> *Id.*

<sup>100</sup> OFFICE OF INSPECTOR GEN., *supra* note 97, at 4–5.

## V. Developing Markets: Firms and Finance

While the change that occurs through dairy management practices improves yields and the welfare of animals to the extent that they get easier access to water, shade and feed. It also accelerates the market forces operating on farms to consolidate, increase herd size, improve herd quality through imported crossbreeding, and to change attendant farm practices. With the pressures to increase efficiencies, significant changes have occurred to date in the herd stock, crossbreeds now make up 13% of Pakistan's cattle population.<sup>101</sup> The crossbreeds have higher yields, longer lactation periods, and shorter calving intervals making them ideal for more intensive dairying practices.<sup>102</sup> The MPMC's are particularly keen for their adoption and to move farmers toward intensifying dairying practices.<sup>103</sup> MPMC's are leveraging their strong corporate and financial positions to partner with banks. This allows them to tap into the government's economic development and lending schemes to unlock loans to dairy farmers who want to grow their businesses, but are hampered by the lack of access to formal channels of credit.<sup>104</sup> For instance, Nestle has partnered with JS Bank, a major local bank and financial conglomerate, to provide dairy development loans under the Prime Minister's Youth Business Loan (PMYBL) scheme to farmers in its network at 6% interest with whom it'll work to grow farms along professional lines.<sup>105</sup> JS Bank has extended its provision of financing for dairy farmers to procure machinery and livestock through a partnership with Engro and bring loans to their network of farmers under the PMYBL.<sup>106</sup> Under the terms of the loans, farmers are eligible to borrow for up to 8 years. During that time, the understanding is they will remain part of their respective company's network, while also being able to access the latest information and guidance to be able to grow their businesses along professional lines.<sup>107</sup> Additionally, Nestle has partnered with a major private

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<sup>101</sup> Tahir et al., *supra* note 20, at 7.

<sup>102</sup> *Id.*

<sup>103</sup> *Id.* at 1.

<sup>104</sup> See, e.g., *JS Bank Partners with Nestle Pakistan under the Prime Minister's Youth Business Loan (PMYBL)*, JS BANK (Dec. 5, 2017), <https://jsbl.com/js-bank-partners-nestle-pakistan-prime-ministers-youth-business-loan-pmybl/> [hereinafter *JS Bank Nestle*]; see, e.g., Staff Report, *JS Bank Partners with Engro Foods to Empower Dairy Sector*, PAK. TODAY (Mar. 29, 2018), <https://profit.pakistantoday.com.pk/2018/03/29/js-bank-partners-with-engro-foods-to-empower-dairy-sector/>; see, e.g., Livestock Financing for Dairy Farmers, BANK AL HABIB, <https://www.bankalhabib.com/livestock> (last updated 2020).

<sup>105</sup> *JS Bank Nestle*, *supra* note 104.

<sup>106</sup> Staff Report, *supra* note 104.

<sup>107</sup> *Id.*

sector bank, Bank Al Habib, under a State Bank of Pakistan Policy to support the financing of small and medium-size enterprises.<sup>108</sup> Under the scheme, farmers who have been working with Nestle for at least two years are eligible to apply for financing to meet their operational costs. (i.e., purchase animals, purchase livestock or dairy equipment and machinery, or pay distribution and transportation expenses).<sup>109</sup> The State Bank of Pakistan defines small enterprises as having up to 50 employees and a minimum annual sales turnover of PKR of 150 million.<sup>110</sup> At the time of writing, the USD to PKR exchange rate is approximately 1 = 160 which would mean a small commercial dairy farm would have close to USD 938,000 in annual sales.<sup>111</sup> A medium enterprise meanwhile may have up to 250 employees and annual sales of PKR 800 million,<sup>112</sup> which in USD would be an annual turnover of approximately USD 5 million.<sup>113</sup> Given these are huge sums of money and nowhere near what any, but perhaps a handful of the large to very large commercial dairy operators, may be achieving. We can certainly question the policy rationale for having such financing available for the dairy sector. More importantly, for our purposes, the very existence of the policy indicates a certain kind of vision. A vision showcasing the desirability of large, commercially operated dairy farms supported by both international and national development policy-makers plus investors. These large commercially operated dairy firms have the right model for the development of the sector.

Let us recall that the MPMC's started out by paying dairy farmers for milk sales weekly – these were by necessity, relatively small amounts.<sup>114</sup> Over the years, they've amassed a vast trove of working knowledge about the dairy economy and have now turned into conduits for much larger infusions of financing into the dairy economy. In order to transform and build it in the forms most profitable for their corporate objectives of encouraging the transition to larger more professionally managed dairy operations. It helps that these interests are also supported by national goals of economic

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<sup>108</sup> *Livestock Financing for Dairy Farmers*, *supra* note 104.

<sup>109</sup> *Id.*

<sup>110</sup> *SME Banking*, BANK AL HABIB, <https://www.bankalhabib.com/sme-banking> (last updated 2020).

<sup>111</sup> See *Pakistani Rupee*, MARKETWATCH, <https://www.marketwatch.com/investing/currency/usdpkr> (last updated Jan. 27, 2021) (set the time field to "1Y" to see when the conversion rate was 1 USD to 160.55 PKR).

<sup>112</sup> *SME Banking*, *supra* note 110.

<sup>113</sup> *Pakistani Rupee*, *supra* note 111.

<sup>114</sup> See *supra* note 41 and text accompanying notes 35–44.

development supported in turn by the expertise and enabling finance of international development agencies.

*A. Dairy Companies and the long path to the Sector's Transformation*

In India, the milk value chain was formalized beginning in the 1960's through the world's largest dairy development cooperative, Amul, under its 'white revolution' in which the farmers are the owners.<sup>115</sup> In Pakistan the creation of the dairy value chain is led by the private sector.<sup>116</sup> The members of the Pakistan Dairy Association, an industry association headquartered in Punjab, are drawn from some of the country's largest MPMC's, such as Nestle, Engro, and Fauji Foods.<sup>117</sup> Recognizing the growing viability of milk as an investment vehicle, the country's military has also entered the formal milk market with its acquisition of the Nurpur brand of milk and other dairy products such as butter.<sup>118</sup> While the advertising for its UHT full cream milk follows the norm of an aspirational middle class<sup>119</sup> morning as seen in advertisements for other brands.<sup>120</sup> Their introduction of a low-fat milk for fitness conscious individuals broke from the norm by showing an intense workout featuring a female and male model.<sup>121</sup> Fauji Foods is a division of Fauji Foundation, the welfare organization formed in 1954 for the benefit of retired army personnel serving nearly 9 million beneficiaries.<sup>122</sup> With such big

<sup>115</sup> See generally *White Revolution*, AMUL DAIRY, <http://www.amuldairy.com/index.php/white-revolution> (last updated 2017).

<sup>116</sup> See Alam, *supra* note 10.

<sup>117</sup> *List of Executive Committee Members 2019-2020*, PAK. DAIRY ASS'N (May 12, 2020), <http://pda.com.pk/> (Navigate to [cachedview.com](http://cachedview.com); then enter [www.pda.com.pk/list\\_of\\_executive\\_committee\\_members\\_pda.htm](http://www.pda.com.pk/list_of_executive_committee_members_pda.htm) in the search bar and search the Google Web Cache).

<sup>118</sup> *Our Story*, FAUJI FOODS, <https://www.faujifoods.com/our-brands/house-of-nurpur/> (last updated Oct. 5, 2020).

<sup>119</sup> By 2011, approximately half the country's households were estimated to be within the middle class category. *Pasteurized*, *supra* note 3; Jawaid A. Ghani, *The Emerging Middle Class in Pakistan: How it Consumes, Earns, and Saves* 3-4 (Karachi Sch. For Bus. & Leadership, Working Paper Series No. 2014-11, 2014), [https://www.researchgate.net/publication/262248885\\_The\\_Emerging\\_Middle\\_Classes\\_in\\_Pakistan\\_How\\_it\\_Consumes\\_Earns\\_and\\_Saves](https://www.researchgate.net/publication/262248885_The_Emerging_Middle_Classes_in_Pakistan_How_it_Consumes_Earns_and_Saves).

<sup>120</sup> A mother and two children prepare breakfast with beautiful shots of milk being poured into tea. House of Nurpur, *Nurpur TVC 2018*, YOUTUBE (May 15, 2018), [https://www.youtube.com/watch?v=lyPMmlu2Z\\_w&feature=emb\\_logo](https://www.youtube.com/watch?v=lyPMmlu2Z_w&feature=emb_logo).

<sup>121</sup> Creative Ads, *Nurpur Low Fat Milk! TVC 2017 | Nurpur Milk Ads | Creative Ads*, YOUTUBE (Mar. 29, 2018), <https://www.youtube.com/watch?v=V7dH6tFnCr4>.

<sup>122</sup> 'Fauj' means 'Army' in Urdu, Pakistan's national language. The Fauji Group was formed in 1954 as a welfare trust for ex-servicemen and their families. It has since grown to a massive listed and traded conglomerate with holdings as diverse

players entering the market for the profit potential, we can expect to see significant changes in the sector in the years ahead. These changes will most affect the livelihood potential, nutritional status of livestock farmers, and small farmers who are agriculturists from the sale of their cattle's milk. Activists and NGO's have warned of the potential harm to rural households for years.<sup>123</sup> As they've identified a main problem of desperately poor livestock farmers and small farmers being forced to sell that very source of nutrition their families need for nutritional safety.<sup>124</sup> This causes their families' income to be insufficient for them to be able to purchase food that provides them with a better source of nutrition.<sup>125</sup> Regardless, the financial and technical support of the international development community and private sector led formalization of the dairy chain in the country continues unabated.

A coffee table book, *Drops of the Divine*, produced by Nestle tells the story of packaged milk in Pakistan including the company's entry into the milk sector.<sup>126</sup> The foundations of the country's first packaged milk brand, MilkPak, were laid in 1974.<sup>127</sup> It formed a lasting partnership with Nestle in 1988 because it saw the need for the foreign company's expertise.<sup>128</sup> The Swiss conglomerate formally took over its operations in 1992.<sup>129</sup> The formalization of the milk value chain in Pakistan through a framework, that at its core supports the development of markets, developed by the private sector is undergirded by the policy and financial support of bilateral donors such as the United States Agency for International Development

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as selling milk and butter under Fauji Foods Ltd., to fertilizer manufacturing and marketing as well as operating power plants. *See generally The Fauji Group*, FAUJI FOODS, <https://www.faujifoods.com/the-fauji-group/> (last updated 2020). While the process of allocating land and resources towards military purposes is an ancient one, the particular form of the Army's present involvement in the rural agricultural domain can be traced to land grants to the military during British colonial rule of the Indian Sub-continent. *See ALI, supra* note 54, at 109–57.

<sup>123</sup> Nadeem Iqbal, *Development-Pakistan: 'Milk Economy' Hurts Rural Households*, INTER PRESS SERVICE (Oct. 10, 2003), <http://www.ipsnews.net/2003/10/development-pakistan-milk-economy-hurts-rural-households/>.

<sup>124</sup> *Id.*

<sup>125</sup> *Id.*

<sup>126</sup> *See generally* NOOR SHEIKH, *DROPS OF THE DIVINE: A STORY OF MILK IN PAKISTAN* (Raisa Vayani ed., 2017), *available at* [https://www.nestle.pk/sites/g/files/pydnoa361/files/asset-library/documents/press\\_releases/nestle-dairy-book-pdf.pdf](https://www.nestle.pk/sites/g/files/pydnoa361/files/asset-library/documents/press_releases/nestle-dairy-book-pdf.pdf).

<sup>127</sup> *Id.* at 40.

<sup>128</sup> *Id.* at 42.

<sup>129</sup> *Id.* at 41.

(USAID).<sup>130</sup> Nestle's Agricultural Services conducts trainings for farmers and has developed farming manuals with IFC's support.<sup>131</sup> In 2017, IFC provided \$145 million in financing to the Dutch dairy company FrieslandCampina for its acquisition of a majority stake in Engro Foods. ('Engro')<sup>132</sup> It reiterated that the investment would have significant developmental impact including: "Food Safety improve product quality and safety standards; Farmer Benefits: Increased benefits to small-holder dairy farmers; Job Creation and Inclusive Growth; Improved Competitiveness: Enhanced supply-chain efficiencies in milk collection; [and] Promote FDI to Pakistan."<sup>133</sup> In short, international development agencies base their support of the private-sector led development of the country's dairy sector because of the potential for dual impact in both the rural areas, through an improvement in farmer incomes, and the country's urban areas, for consumers' ability to access high quality milk. Engro's market share for its flagship Olper's brand stands at 45% of the market for packaged milk.<sup>134</sup> Together, with Nestle, the two companies control just over 90% of Pakistan's market for packaged milk.<sup>135</sup> In the creation of this value chain, there are significant gains for the private companies that create the brands on which consumers rely. I suggest, limited gains for livestock farmers and small farmers coupled with significant detriments to their interests.

Accompanying this positive assessment is an evaluation by MPMC's, namely Nestle and Engro, with their dominance of the packaged milk sector. The MPMC's are responsible for the sector's formalization and development of markets that connect farmers to urban markets in the context of the more traditional marketing functions they know well through the development of brands and advertising targeting various segments of the markets they create and

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<sup>130</sup> USAID's Dairy Project is aimed at supporting 49,000 dairy farmers in Punjab province by providing them with information to upgrade their dairy practices. The project also aims to train 6,000 female extension workers and 2,500 male artificial insemination workers so that they can become self-employed workers in the agricultural value chain in the province. *Dairy Project*, *supra* note 97.

<sup>131</sup> News Desk, *How is Nestle Pakistan Empowering Dairy Farmers?*, GLOBAL VILLAGE SPACE (July 17, 2019), <https://www.globalvillagespace.com/how-is-nestle-pakistan-empowering-dairy-farmers/>.

<sup>132</sup> Jim Cornall, *IFC Helping FrieslandCampina with \$145m Package for Engro Purchase*, DAIRYREPORTER.COM (Feb. 6, 2017, 12:14 GMT), [https://www.dairyreporter.com/Article/2017/02/06/IFC-helping-FrieslandCampina-with-145m-package-for-Engro-purchase?utm\\_source=copyright&utm\\_medium=OnSite&utm\\_campaign=copyright](https://www.dairyreporter.com/Article/2017/02/06/IFC-helping-FrieslandCampina-with-145m-package-for-Engro-purchase?utm_source=copyright&utm_medium=OnSite&utm_campaign=copyright).

<sup>133</sup> MOSES, *supra* note 60, at 17.

<sup>134</sup> Alam, *supra* note 10.

<sup>135</sup> *Id.*

serve. For the most part, it is these commercial companies that are doing the work of creating the forms of the market and the dairy industry that is taking shape. Given the critical role of companies in creating the overall structures of the dairy industry, and this is in sharp contrast to India, their actions need careful scrutiny of both the actions they choose to undertake and the tasks they leave unattended as functions they believe are the proper domain either of governments or the responsibility of farmers themselves. To give an example of neighboring India, functions such as “animal breeding, animal nutrition, and animal health and hygiene” are all the responsibility of the cooperative.<sup>136</sup> While the companies have developed training programs with donor support that are meant to enhance animal health and hygiene<sup>137</sup> they leave unattended other key areas such as animal breeding as well as animal nutrition – a key contributor to low yields.<sup>138</sup> For instance, in an interview the Engro CEO made clear that as far as the company is concerned the problem of low yields can be addressed if farmers give a proper feed to their cattle: “That is the biggest issue in getting affordable (packaged) milk to people.”<sup>139</sup> The problem however may be more complex than what Engro’s CEO identified. On a major study mission of Pakistan’s dairy sector, Australian experts identified the problem of inadequate feed leading to low dairy yields as a complex problem by situating dairy animals and their roles in rural life beyond the evaluation of a single metric – low yields being linked to inadequate nutrition.<sup>140</sup> Their analysis bears quoting at length:

Between 1990 and 2005, there has been a trend towards reduced areas of fodder crops, while production per ha has remained static. At the same time, the livestock population has increased, circumstances that suggest nutrient requirements for maintenance have increased, reducing availability for production. This critical constraint of insufficient feed consumed by dairy animals is recognized by scientists, as is the fact that this is aggravated by continuous increases in the milking animal population. Why are these trends occurring? Do farmers not understand basic principles of

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<sup>136</sup> *White Revolution*, *supra* note 115.

<sup>137</sup> See MOSES, *supra* note 60, at 20 (“We are grateful to IFC for the technical expertise. . . . The knowledge we received has been very useful. We hope that the value additions will prove beneficial for the farmers who will receive the knowledge and insights.”).

<sup>138</sup> See Alam, *supra* note 10.

<sup>139</sup> *Id.*

<sup>140</sup> See WYNN ET AL., *supra* note 31, at 5–8.

requirements for maintenance and production? Are there other factors at play, such as risk management because of high mortality or opportunities in meat and livestock trading to commercial milk producers? Clearly, large ruminants have traditionally provided milk for household consumption in Pakistan and will continue to do so. However, they also fulfil other roles, such as:

- providing supplementary income from milk,
- being an easily liquidated asset, thus providing security against crop failure,
- providing manure important to maintaining soil fertility,
- meat production,
- sale of milking or breeding cows to commercial milk producers,
- an avenue to convert crop by-products into saleable foods,
- gainful employment of available family Labour, and
- in some systems, providing draft power.<sup>141</sup>

To address the issue of nutrition as it leads to milk production, a host of incentives that go beyond those operating on feed markets, and of what Engro has identified perhaps simplistically as sub-optimal behavior on the part of farmers, will need to be addressed. This also raises the question of the role and capacities of various levels of government responsible for the regulation and development of the dairy sector more broadly. Given Pakistan's federal constitutional structure, agriculture and thereby dairy, is a provincial subject<sup>142</sup> with a potentially very significant role for provincial governments and NGO's within the context of the broader financing interface of the federal government with bilateral donors and international development finance institutions.<sup>143</sup> The interplay of the two levels of government has a significant impact on developments on the ground in a given province especially since the

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<sup>141</sup> *Id.* at 7.

<sup>142</sup> Agriculture is a residuary provincial power in the Constitution of Pakistan. *Understanding Agriculture's Constitutional Arrangement*, BUSINESS RECORDER (Jan. 13, 2020), <https://www.brecorder.com/news/561266/>.

<sup>143</sup> USAID for instance funds an NGO, the Dairy and Rural Development Foundation for its project in support of the Government of Punjab. See Shumaila Jamil, *USAID DRDF Dairy Project Corporate Documentary*, YOUTUBE (Jan. 28, 2017), <https://www.youtube.com/watch?v=XyBTecw5v74> (explaining that USAID, for instance, funds an NGO, the Dairy and Rural Development Foundation for its project in support of the Government of Punjab).

federal government is the ultimate guarantor of development loans and the primary arranger of such international development financing.<sup>144</sup> The most significant impacts of the relations between the federal government and any particular provincial government arise in cases in which the provincial government is from a party that is not an ally or is in opposition to the federal government in a given province.<sup>145</sup> This is especially the case because the federal government is often the conduit for channeling development financing for the overall skill development and enhancement of the dairy sector in a particular province.<sup>146</sup> Without such access to financing for provincial development initiatives, farmers and the overall state of the dairy and livestock sector within a province end up suffering.

The particular form of actions that the two largest MPMC's, Nestle and Engro, adopt impacts not just the operations and incentives of the dairy farmers within their networks, but also the actions of other commercial entrants into the dairy sector. Fauji Foods as a significant, new operator in the milk and dairy value chain launched a dairy creamer *Dostea*, a play on the Urdu word for

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<sup>144</sup> See *Centre-province Ties*, DAWN (Feb. 6, 2019), <https://www.dawn.com/news/1462149> (explaining that center-province relations under the present government have been getting progressively more protracted especially in relation to when a particular provincial government is from the opposing party to the party in power at the center); see Mishal S. Khan et al., *How do External Donors Influence National Health Policy Processes? Experiences of Domestic Policy Actors in Cambodia and Pakistan*, 33 *Health Pol. Planning* 215, 215–23 (2018) (explaining that while the influence of donors on actual policy development and outcomes is complex, because donors are perceived as being policy experts who can also unlock financial resources for a country, policy makers at lower tiers of government find it relatively challenging to engage with them for the purposes of policy formulation and implementation). For a mapping of Pakistan's significant donors and the geographic scope of their projects, see generally UNITED NATIONS PAK., *PAKISTAN DONOR PROFILE AND MAPPING* (2014), available at [http://climateinfo.pk/frontend/web/attachments/data-type/UN%20\(2014\)%20Pakistan%20Donor%20Profiles%20and%20Mapping.pdf](http://climateinfo.pk/frontend/web/attachments/data-type/UN%20(2014)%20Pakistan%20Donor%20Profiles%20and%20Mapping.pdf). The US in particular has been Pakistan's top donor of on-budget, grant-based assistance that is directed via the federal government. See generally U.S. *Assistance to Pakistan*, U.S. EMBASSY & CONSULATES IN PAK., <https://pk.usembassy.gov/our-relationship/policy-history/us-assistance-to-pakistan/>.

<sup>145</sup> This is the case with the current provincial government in Sindh province being from the PPP – the party of the assassinated former Prime Minister, Benazir Bhutto while Imran Khan the former cricket star turned philanthropist and politician is now the prime minister with his party, PTI in power at the federal level. See ZIA ET AL., *supra* note 5, at 14.

<sup>146</sup> *Id.* at 9.

friendship<sup>147</sup>. Now they are working to build their brand through heavy advertising, in ways that are very familiar to consumers of packaged milk.<sup>148</sup> The series of launch advertisements show an unusual and progressive family that breaks gender norms – e.g., the wife is a doctor and the husband is a chef and many such interesting turns in the extended family.<sup>149</sup> In addition to this trio of large companies, dozens of smaller companies have cropped up to mimic this transformation of the dairy value chain supplying their brands, mainly in smaller towns which may not be the primary focus of the bigger firms and not worth extending their distribution network to particularly given the higher price point for their brands.<sup>150</sup>

As can be expected with the presence of these heavy hitters seeking profits from the dairy sector, rural practices are changing rapidly. In this process the country's dairy farmers are being tied to the increasing demand for milk and branded milk products of the growing middle class by the actions of large companies. These include, but are not limited to, extremely sophisticated and well-funded corporate media advertising and branding operations.<sup>151</sup> The MPMC's work with extensive advertising budgets to make packaged milk desirable to the aspirational urban consumer.<sup>152</sup> The level and scale of the television, print, and outdoor media advertising the MPMC's have undertaken is stunningly large. Created with very high-quality production values, through the use of trusted household actors and singers drawn from the country's media industry.<sup>153</sup> Advertising agencies, including the local partner agencies of international firms headquartered in New York City, have taken the lead in developing the marketing campaigns of all the country's major brands.<sup>154</sup> These are elaborate productions telling the tale of a nation. The biggest thematic campaigns are organized around several themes: the safety and health that mothers can give their children by

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<sup>147</sup> See *Our Story*, DOSTEA, <https://www.faujifoods.com/our-brands/dostea/> (last updated Oct. 5, 2020).

<sup>148</sup> See *id.*

<sup>149</sup> Dostea, *Restaurant - #Rishton main bhara #Dostea key rang!*, YOUTUBE (June 2, 2017), [https://www.youtube.com/watch?v=JIF3Pqc6dwI&feature=emb\\_logo](https://www.youtube.com/watch?v=JIF3Pqc6dwI&feature=emb_logo); see Dostea, *Rishta - #Dostea se banain apnay ghar ko #DosteaGhar*, YOUTUBE (June 2, 2017), [https://www.youtube.com/watch?v=w-Q4t3DxE44&feature=emb\\_logo](https://www.youtube.com/watch?v=w-Q4t3DxE44&feature=emb_logo).

<sup>150</sup> See generally Ansari et al., *supra* note 64, § 4.

<sup>151</sup> See Andrew, *supra* note 22; see Shoaib Pervaiz & Farooq Tirmizi, *The Next Phase of the Milk Wars*, PAK. TODAY (Jan. 14, 2019), <https://profit.pakistantoday.com.pk/2019/01/14/the-next-phase-of-the-milk-wars/>.

<sup>152</sup> Andrew, *supra* note 22; Pervaiz & Tirmizi, *supra* note 150.

<sup>153</sup> See Andrew, *supra* note 22; see Pervaiz & Tirmizi, *supra* note 150.

<sup>154</sup> See Pervaiz & Tirmizi, *supra* note 150. See generally *About*, OGILVY, <https://www.ogilvy.com/about#ogilvy>.

giving them packaged as opposed to unhygienic loose milk; the role of milky tea (chai) in gatherings of family and friends, which plays on and updates the traditional role of young women of marriageable age serving tea to a prospective groom and his family who have come to seek her hand in marriage; enlightened husbands serving their wives tea after she comes home from work; and the biggest annual advertising campaigns of the year capitalize on the idea of piety associated with the Muslim holy month of Ramzan, the month of fasting and feasting in which the morning and evening cups of tea are major desirables.<sup>155</sup> Whereas MPMC's started out by positioning their respective milk brands as providing their customers with the highest quality of milk, guaranteed to be free of the impurities normally associated with loose milk. Loose milk, as we've seen, retains its overwhelming share of the milk market despite years of efforts to the contrary. To get a full sense of their promise about the quality they hoped to convince consumers of, one need only look at their lavish advertising campaigns. These are centered around television commercials with high production values, featuring national celebrities in glamorous settings, custom background scores, and songs.<sup>156</sup> It has become the norm for milk brands to release new, big budget advertising campaigns around the Muslim calendar month of Ramzan (Ramadan in Arabic) that is followed by the festival of Eid as occasions for fasting followed by feasting.<sup>157</sup> The idea is to capitalize on special occasions and build and reinforce customer loyalty around family holidays. Only big brands can do that, whereas the small farmer or loose fresh milk category does not advertise. Additionally, there is no consortium on its behalf, such as

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<sup>155</sup> See Andrew, *supra* note 22; see Pervaiz & Tirmizi, *supra* note 150; see The Vision Factory, *Olper's – Ramzan IV, Directed by Asim Raza (The Vision Factory)*, YOUTUBE (Aug. 21, 2009), <https://www.youtube.com/watch?v=kf3fybQaL8o>.

<sup>156</sup> A look at illustrative television commercials (TVCs) from some of the major brands gives us a flavor of broad themes presented by MPMC's. For instance, an ad for Haleeb Milk shows a perfect mother getting her kids ready for the day by giving her two young children glasses of milk while her husband in an early morning scene of domestic bliss hands her a cup of tea. Benetone Films, *Haleeb Milk*, YOUTUBE (Oct. 14, 2016), <https://www.youtube.com/watch?v=5pK11YaXcwc>. The ad continues with the mother-in-law making dessert with the help of her grandson by using Haleeb milk. *Id.* The day ends with a party in their garden serving the desserts they've made together as a family at a moment in which the mother-in-law is clearly proud of her daughter-in-law and they are showing receiving the appreciation of their guests. *Id.* A particular form of an aspirational life dominates. *See id.*

<sup>157</sup> See The Vision Factory, *supra* note 154. An Olpers ad opens with a craftsman from Brunei, an artist from Pakistan, an engineer from Morocco, a dervish from Turkey, a doctor from Dubai and a scientist from Egypt highlighting their common Muslim bond and invitation of peace towards all in the holy month. *See id.* It closes with scenes of people opening the fast together in a mosque. *Id.*

a dairy council or cooperative, that would engage in promoting fresh, raw milk as a category.

One other aspect to consider is the form of the market that is being created through the operations of the commercial MPMC's in the dairy value chain. Particularly, the procurement of milk from dispersed farmers by tying them to corporate distribution networks. A large exogenous factor may be needed for farmers to move outside of these commercial dairy value chains. This is especially the case due to the newer forms of commercial financing being in-network enables for the farmers. In addition, small farmers are by definition geographically limited and depend on local, traditional milk sellers or MPMC's to buy their milk since they are unable to sell to non-local procurers.<sup>158</sup> Once assured of relative price stability within an established value chain, farmers would consider taking on the potential risk of self-organizing in cooperatives. This is particularly so because the small farmers and landless agricultural workers, we are primarily concerned with, have little financial capacity to undertake any investments which could result in future gains. Clearly, government is not ready to intervene in any such organizational effort, given its demonstrated reliance on donors and corporates to create the dairy value chain.<sup>159</sup> This leaves little room for the introduction of a potentially disruptive, exogenous factor. Small farmers already living on the margins don't have much choice, particularly in the form of market they wish to participate in.

As indicated above, unlike neighboring India with its iconic post-independence Amul dairy cooperative, in Pakistan there is no large-scale discernible movement towards forming dairy farmers' cooperatives with their own milk processing and acquisition facilities.<sup>160</sup>

### *B. History and Development Affecting the Small Dairy Farmer*

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<sup>158</sup> ZIA ET AL., *supra* note 5, at 19.

<sup>159</sup> *See id.* at 9; *see* CVS NESTLÉ, *supra* note 6, at 28–29.

<sup>160</sup> While there are nascent trends of small-scale dairy cooperatives being developed around smaller urban areas in parts of Punjab province, the bulk of formal market development is being undertaken by the MPMC's; on the emergence of cooperatives. *See* ZIA ET AL., *supra* note 5, at 9; *see* *Co-operatives Are Empowering Dairy Farmers in Pakistan*, INT'L CO-OPERATIVE ALLIANCE (July 21, 2015), <https://www.ica.coop/en/media/news/co-operatives-are-empowering-dairy-farmers-pakistan>.

The prevailing understanding of how important agriculture and dairy are in the makeup of the country is one, among many illustrations of how trends, far away in time and place, continue to have a major impact on livestock and small farmers. As per the Government of Pakistan:

Besides its importance and share in the national economy, the history of livestock raising is embedded in the rural life since inception of our civilization. It is still a sign of prestige for the people associated with agriculture sector. It is an integral part of socio-economic activities of the rural areas and plays a very supportive role in mitigating the effects of poverty by providing essential items of daily use.<sup>161</sup>

In addition, multilateral organizations, such as IFC, are committed to the development of the private sector in developing countries and are a primary driver of the huge structural shift underway.<sup>162</sup> IFC situates the development of dairy as a key theme of its agribusiness agenda.<sup>163</sup> It also conceives the existence of smallholders in the dairy supply chain as a challenge for the development of the sector, and diversified ownership as a barrier to investment.<sup>164</sup> Moreover, in identifying reasons why projects fail, it highlights cooperatives (owned by farmers) as a paradigmatic example.<sup>165</sup> In the popular discourse around the higher quality milk that is now more easily accessible to middle class Pakistani families, these connections are neither made explicit nor acknowledged.<sup>166</sup> For our purposes, however, it is critical to situate the significant changes in Pakistan's dairy sector within the broader international development financing framework that has enabled and continues to support the changes underway.

Given the IFC has a significant commitment to what is the growing field of bottom-of-the-pyramid inclusive businesses, but

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<sup>161</sup> *Livestock Census 2006*, *supra* note 38, at XVII.

<sup>162</sup> *See About IFC*, INT'L FIN. CORP., [https://www.ifc.org/wps/wcm/connect/corp\\_ext\\_content/ifc\\_external\\_corporate\\_site/about+ifc\\_new](https://www.ifc.org/wps/wcm/connect/corp_ext_content/ifc_external_corporate_site/about+ifc_new) (last visited Sept. 28, 2020).

<sup>163</sup> *See generally* MOSES, *supra* note 60, at 3.

<sup>164</sup> *Id.* at 8.

<sup>165</sup> *Id.* at 12.

<sup>166</sup> *See FrieslandCampina Enters Fast Growing Pakistani Dairy Market Through Engro Foods*, FRIESLANDCAMPINA (July 3, 2016), <https://www.frieslandcampina.com/news/frieslandcampina-enters-pakistani-dairy-market-engro-foods/>.

does acknowledge it is difficult to find a solution to the challenge of nutrition for base of the pyramid consumers.<sup>167</sup> Let us pause here for a moment to acknowledge that having dairy cattle, plus access to milk within the household, is a key source of animal protein for landless dairy farmers and smallholders. One view is that precisely when they enter the market to sell any surplus their nutritional safety is impaired due to the low prices farmers receive, preventing them from purchasing foods of higher nutritional value.<sup>168</sup> It is at this point when we must make the underlying presumption of development agencies explicit. Such that it is accepted as true, developing and sustaining robust markets meets the twin goals of either: reaching the poor with services; or somehow raising the conditions of their lives by giving them access to markets. The markets are a means by which they can increase their earnings. An important study by a local grassroots NGO, Punjab Lok Sujag,<sup>169</sup> reached the conclusion that the operations of large MPMC's, such as Nestle, were in fact the result of farmers being forced by market pressures to sell their "surplus" milk and their sales were "poverty driven."<sup>170</sup> Large companies are thus hugely profitable, but their profits result from deep, rural misery and rising nutritional insecurity.<sup>171</sup>

If the goal of "development" becomes the development of *markets*, then theorists, policy makers, and citizens should, or must, ask whether the market-primacy presumption is acceptable, or desirable. If the answer to that question is in the affirmative, then a follow-up question needs to be asked: What particular form should those markets take? It is a comparative question that meets the broader goal of the symposium of which it is a part. The aim of this comparative project is to learn from the ways in which developments in the dairy sectors of other countries have occurred and to draw lessons for the directions which Pakistan's dairy sector may develop. For the sake of argument, if the commitment was to design a milk procurement and marketing supply-chain in Pakistan. Then the particular forms the process takes, particularly because of its distributional effects, has significant consequences.

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<sup>167</sup> MOSES, *supra* note 60, at 13; see BETH JENKINS ET AL., INCLUSIVE BUSINESS SOLUTIONS: EXPANDING OPPORTUNITY AND ACCESS AT THE BASE OF THE PYRAMID 2 (Int'l Fin. Corp., 2010).

<sup>168</sup> Iqbal, *supra* note 123.

<sup>169</sup> Meaning people' awareness/awakening.

<sup>170</sup> See PUNJAB LOK SUJAG, THE POLITICAL ECONOMY OF MILK IN PUNJAB: A PEOPLE'S PERSPECTIVE 6-7, 13, 15 (2003).

<sup>171</sup> *Id.* at 11-12.

*C. Hormonal Injections – and Claims to Quality and Purity*

In addition to what may be relatively benign changes in overall animal welfare (free access to drinking water and shaded stalls to house cattle instead of tying them inside hot brick rooms as advised by company representatives), there is a related and understudied aspect of the goal to increase milk yields. The concern is with the unregulated use of hormonal injections given to cattle. Milk sellers in Karachi, when faced with a ban on recombinant bovine somatotropin (rBST<sup>172</sup>) pointed to its approval by the FDA, based on which it was given subsequent approval in Pakistan in 1998.<sup>173</sup> This, they claim, is justification for the injection's safety and hence regular use in the country.<sup>174</sup> However, the Drug Regulatory Authority of Pakistan eventually banned three previously authorized hormonal injections (including rBST and rBGH).<sup>175</sup> Health officials, however, admitted that rBST's excessive use started after its approval.<sup>176</sup> At the hearing before the Supreme Court bench, a senior advocate assisting the court submitted that not only was the hormone harmful to human health, but also had detrimental effects on cow and buffalo health.<sup>177</sup> There is also the significant threat of potential harm to human health later in life from consuming milk from animals that receive these injections, including breast and prostate cancer<sup>178</sup>. This shows that there are both negative effects on livestock health and lifespan, as well as on human health.<sup>179</sup> The push for greater yields is pushing the limits of regulation – with the forces for higher yields continuing to push the limits of regulation.

Another hormone is oxytocin. More commonly known as the cuddle hormone, or in Urdu and Hindi as the '*doodh ki dawa*' or

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<sup>172</sup> *Dairy Farmers Seek Time to Implement SC Ban on Hormonal Injections*, THE CATTLE SITE (Jan. 10, 2018), <https://www.thecattlesite.com/news/52527/dairy-farmers-seek-time-to-implement-sc-ban-on-hormonal-injections/> [hereinafter THE CATTLE SITE].

<sup>173</sup> See generally *Bovine Somatotropin (bST)*, U.S. FOOD & DRUG ADMIN. (Apr. 21, 2020), <https://www.fda.gov/animal-veterinary/product-safety-information/bovine-somatotropin-bst>.

<sup>174</sup> THE CATTLE SITE, *supra* note 170.

<sup>175</sup> *Drap De-lists Three Hormone Injections*, DAWN (Jan. 9, 2018), <https://www.dawn.com/news/1381717> [hereinafter *Drap*].

<sup>176</sup> Hasan Mansoor, *Sindh Slaps Ban on Hormonal Injections*, DAWN (Feb. 20, 2018), <https://www.dawn.com/news/1390418>.

<sup>177</sup> APP, *Import and Sale of Hormone Injections Banned*, DAWN (Jan. 7, 2018), <https://www.dawn.com/news/1381337>; see *Drap*, *supra* note 173.

<sup>178</sup> See *Dangerous Hormones*, DAWN (Jan. 12, 2018), <https://www.dawn.com/news/1382316>.

<sup>179</sup> See *id.*

'milk medicine,' is also given to cattle to increase milk yields.<sup>180</sup> Administered into the neck or leg of the animal before milking, up to twice a day on a regular basis because of its impact on milk production. It has the effect of not only making milking easier, but also releasing the milk normally stored in the udders and retained there for use by calves thus depriving calves of the important antibodies found in mother's milk.<sup>181</sup> This effect in itself will increase milk production overall by a few liters.<sup>182</sup> In addition to depriving calves of a valuable food source, because it causes uterine contractions (gynecologists may administer it to women during labor to induce contractions under specific conditions), it causes significant pain to the livestock.<sup>183</sup> This experience of pain undergone at each milking must become the norm for the livestock that have to endure it on a regular basis. It is quite likely that livestock treated this way also become barren in as little as 1-3 years, leading them to be sold for their meat.<sup>184</sup> Not only does the hormone have significant harmful effects on animal welfare, it also has negative effects on human health. These effects come in the form of early onset menstruation, via early puberty, weight gain, and an increase in dark facial hair in girls at a time in their lives in which they are particularly vulnerable to the physical and psychological effects of such changes.<sup>185</sup> While the unregulated use of oxytocin is banned in Pakistan, as in neighboring India, with significant fines as well as prison time for its administration. The unlicensed use as the undercover operation from India, likely remains a problem.<sup>186</sup>

The problem of quality of the milk supply such that concerns are not just limited to loose, fresh milk available at neighborhood

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<sup>180</sup> Given the similarity of conditions between South Asia's two largest countries, we can safely look to India for the unregulated use of oxycontin in cattle and assume that similar practice may be occurring in Pakistan. A significant undercover operation in cattle markets outside Mumbai, India was undertaken by a Mid-Day team. See Vinod Kumar Menon & Ranjeet Jadhav, *Banned Drug Injected into Cattle is Poisoning Your Milk*, MID-DAY.COM (June 11, 2013, 10:01 IST), <https://www.mid-day.com/articles/banned-drug-injected-into-cattle-is-poisoning-your-milk/217645>.

<sup>181</sup> *Id.*

<sup>182</sup> *Id.*

<sup>183</sup> *Id.*

<sup>184</sup> *Id.*

<sup>185</sup> *Id.*

<sup>186</sup> *Id.*; see Fakhir Rizvi, *Use of Lethal Oxytocin to Milk Cattle Continues Unabated*, URDUPOINT (Nov. 11, 2018, 5:00 PM), <https://www.urdupoint.com/en/pakistan/use-of-lethal-oxytocin-to-milk-cattle-continu-478219.html>.

milk sellers,<sup>187</sup> but also the quality and contents of some MPMC packaged milk brands remains suspect.<sup>188</sup> Approximately 97% of the milk sold in the country is in raw, loose, and fresh form where quality problems are, by the very nature of fresh and unregulated milk being transported without refrigeration and sold through small milk shops, most pressing.<sup>189</sup> The remainder of the 3% of the milk supply in UHT packaged form while safer, nevertheless is not free from quality concerns. A recent study of eight major packaged milk brands marketed by the country's major MPMC's found chemical adulterants in all of them.<sup>190</sup> These included formalin, cane sugar, glucose, alkalinity, and benzoic acid.<sup>191</sup> In some ways adulterated, packaged milk is of greater concern since quality is a significant part of the positioning of the milk brands sold by the MPMC's.<sup>192</sup>

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<sup>187</sup> While loose milk remains under-regulated and thereby potentially more unhygienic, it is certainly the case that it is in the interests of the MPMCs to highlight its dangers and thereby increase their share of the milk market. Alam, *supra* note 10 ("The dairy industry is in the middle of yet another campaign against loose milk producers. Aesthetically appalling images of actors spitting into loose milk drums draw consumers' attention to unhygienic practices of the commodity's primary producers. Doctors in white lab coats proselytize viewers about the dangers of loose milk. 'Those are facts. It's not something doctors have made up,' [Ali Ahmed Khan, Engro's Managing Director] says about industry-funded research with a whiff of frustration.").

<sup>188</sup> Adeela Awan et al., *A Study on Chemical Composition of Detection of Chemical Adulteration in Tetra Pack Milk Samples Commercially Available in Multan*, 27 PAK. J. PHARM. SCI. 183, 184-85 (2014).

<sup>189</sup> *Id.* at 183; Anam Hakeem, *Beyond UHT Milk*, AURORA (May-June 2012), <https://aurora.dawn.com/news/1141893>.

<sup>190</sup> Awan et al., *supra* note 185, at 184.

<sup>191</sup> *Id.* at 184-85 ("Alkalinity measures the ability of a solution to neutralize acids to the equivalence point of carbonate or bicarbonate. Rideout *et al.* (2008) has reported that high amounts of carbonates and bicarbonates disrupts hormone signals that regulate development and reproduction. Levels of carbonates and bicarbonates must be kept in milk samples as higher alkalinity values can cause milk alkali syndrome resulting in systemic alkalosis, renal failure, high blood pressure, hypertension, cardiac failure and edema (Troy, 2005). Benzoic acid is a natural component of milk but if its concentration in preserved milk exceeds 2000 mg/kg it can be dangerous for health (Wibbertmann, 2000). Formalin is added to milk as preservative but may cause vomiting, diarrhea, abdominal pain, increased body temperatures, shallow respiration, weak irregular pulse, unconsciousness, blindness and it is also a potent carcinogen (Gwin *et al.*, 2009).").

<sup>192</sup> Olper's Milk, *Olper's Milk #SachKaSafar*, YouTube (Sept. 24, 2016), <https://www.youtube.com/watch?v=LK4OICoUFP8>. In a long television infomercial format by Engro Foods' Olper's titled #SachKaSafar – the Journey of Truth, a questioning consumer is guided by a well-known television news talk show host on a journey that shows him the company's entire milk collection and packaging chain as he raises questions to company representatives that are typically raised by consumers comparing raw milk vs. packaged milk brands. *Id.* For instance, during a tour of the factory, the main character of the ad while conveying common consumer concerns asks for example why milk fat does not rise to the surface when packaged milk is boiled which it does when raw milk is

Television commercials stake a claim to branded milk being clean and of high quality, as being free of adulteration and undergoing significant quality checks.<sup>193</sup> Engro Foods, the owner of a major brand, Olper amongst others, undertakes 27-28 physicochemical tests from point of collection to point of packaging.<sup>194</sup> Nevertheless, after ordering an inquiry into reports of unchecked hormone injections being given to cattle the country's Supreme Court took *suo moto* notice under its original jurisdiction powers in the constitution.<sup>195</sup> They issued notices to companies selling UHT milk to explain their quality control policies and practices.<sup>196</sup> To increase yields in cattle raised on a commercial scale, the use of rBST hormonal injections has become common.<sup>197</sup> The court reiterated it was a matter of public health and imperative that milk be free of cancer-causing hormonal injections.<sup>198</sup> The court also warned dairy

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boiled to which the representative responds that it is because in packaged milk the milk fat is dispersed throughout the milk (it is homogenized) which makes it nutritious and delicious. *Id.* He goes on to say that boiling kills harmful bacteria but also reduces milk's nutrients whereas there are no harmful bacteria in packaged milk, and it retains its nutrients. *Id.* In an interaction with a well-known internet personality and influencer uploaded to his channel titled Doodh Ka Doodh, Paani Ka Paani (a play on an Urdu saying that roughly translated means once put to a test, what is milk will become clear and what is water will become clear), Haleeb Foods gives him and his friends who arrive unannounced a tour of its factory and shows them all the ways in which the company has a rigorous testing regime in place that ensures that its milk is pure and free of adulterants. Junaid Akram, *Doodh Ka Doodh – Paani Ka Paani | Junaid Akram*, YOUTUBE (Apr. 7, 2018), <https://www.youtube.com/watch?v=KBK0tPkezHI>.

<sup>193</sup> Best Pakistani ADS, *Manao Happy Subha With Olper's AD – Pakistani Milk TVC (2018)*, YOUTUBE (Sept. 27, 2018), <https://www.youtube.com/watch?v=qNBwrDDT0i0>. The TVC for Olper's Happy Subha (morning) shows a happy cow giving high quality milk that has a high fat content (as a perception of quality: high fat content is linked to a nutritious and delicious product). *Id.* To make its point, in what looks like an Olper's consumer, a middle-class mother, is the one who is going to a cow in its pen in the morning. *Id.* Of course, this depiction is only to make the point and we should not see it as being actually representative of the typical usually much poorer dairy farmer.

<sup>194</sup> *PCSIR Declares Olper's Milk 100pc Pure & Safe for Consumption*, THE NEWS (Jan. 31, 2018), <https://www.thenews.com.pk/print/275061-pcsir-declares-olper-s-milk-100pc-pure-safe-for-consumption>.

<sup>195</sup> See Sikander Ali, *Suo Moto: A Case of Judicial Overreach?*, LEGAL EDUC. AND ACCESS PORTAL (Dec. 12, 2019), <https://leappakistan.com/suo-moto-a-case-of-judicial-overreach/>.

<sup>196</sup> Supreme Court of Pakistan Civil Petition at 2–6, *Bhatti v. Government of Punjab* (2016) (No. 2374-L/2016 & C.M.A. No. 2702-L/2016), [https://propakistani.pk/wp-content/uploads/2016/12/court-order\\_2.pdf](https://propakistani.pk/wp-content/uploads/2016/12/court-order_2.pdf) [hereinafter Civil Petition]; see Jamal Khurshid, *CJP Terms Packaged Milk a Fraud with Masses*, THE NEWS (Jan. 4, 2018), <https://www.thenews.com.pk/print/268303-cjp-terms-packaged-milk-a-fraud-with-masses>.

<sup>197</sup> Faiza Ilyas, *Banned Hormone Still in Use in Dairy Business Despite Health Hazards*, DAWN (Sept. 30, 2015), <https://www.dawn.com/news/1209783>.

<sup>198</sup> Khurshid, *supra* note 193.

farmers it would send them to “prison if they tried to pressurize the administration by creating artificial milk shortage.”<sup>199</sup> For the moment, the competing narratives about safety continue to play themselves out in the court of public opinion.

*D. Significantly, a Turn to Imports*

Stepping into this vacuum, MPMC have begun to offer highly marketed brands of creamers, particularly powdered tea whiteners.<sup>200</sup> It is critical to explore the dynamics of what may at first look like contrary developments, but in fact the turn to imported dry milk powders and efforts by MPMC’s to build successful brands around a new kind of manufactured product are entirely rational. Despite being the world’s fourth largest producer of milk, Pakistan remains a milk-deficit country.<sup>201</sup> Milk without refrigeration has a shelf life of about four hours and is highly prone to spoilage plus bacterial growth without refrigeration in high temperatures.<sup>202</sup> In this climate, manufactured non-dairy creamers, particularly powdered, have tapped into a keen consumer need. As expected, there has been pushback too. The country’s ex-Chief Justice of the Supreme Court taking notice of the quality of packaged milk reiterated that tea whiteners are not a substitute for milk and their packaging must state that they are a manufactured product, not milk.<sup>203</sup>

Pakistan is said to be having its own version of a “White Revolution.”<sup>204</sup> A revolution, that is, in milk production.<sup>205</sup> An ultimate goal of this revolution is to raise the quality of milk available in the country while also becoming a net exporter of milk-based

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<sup>199</sup> *Id.*

<sup>200</sup> Andrew, *supra* note 22.

<sup>201</sup> Alam, *supra* note 10.

<sup>202</sup> Kamran & Rizvi, *supra* note 68, at 910.

<sup>203</sup> Khurshid, *supra* note 193.

<sup>204</sup> *Milking the White Revolution*, Pak. Today (June 12, 2013), <https://www.pakistantoday.com.pk/2013/06/12/milking-the-white-revolution/>. As a director of the Pakistan Dairy Association put it, the integrated idea of “[t]his ‘White Revolution’ has aimed at improving research facilities, training and capacity building of farmers, training veterinarians, improving the cold chain through milk chillers, promoting healthy pasteurized milk, developing model commercial dairy farms, focusing on breed improvement, facilitation of credit financing to dairy farmers, and linking rural based farmers to market mechanisms.” *Id.*

<sup>205</sup> *White Revolution*, *supra* note 115. This needs to be contrasted with the “White Revolution,” the organization of the milk production and value chain as established in neighboring India beginning in the 1960s through the establishment of the world’s largest dairy development cooperative.

products.<sup>206</sup> Despite being the fourth largest producer of milk in the world, there has been a steady increase in the imports of dry and loose milk powders, both skimmed milk and whey powder, at the cost of local fresh milk production.<sup>207</sup> The country remains a net importer of milk.<sup>208</sup> The question is, how a stated policy commitment to increasing local milk production to not only be able to meet local needs but also to capture export markets reconcile with significant dry milk powder imports that are mixed with vegetable oils to make dairy liquids as well as whiteners for tea and coffee to meet local needs. Since 2007 there is a discernible shift in what the MPMC's are doing such that from positioning themselves from selling pure milk procured from Pakistan's dairy farmers, towards selling what are referred to as 'recipe products' – pure milk substitutes that are manufactured from imported milk powders mixed with vegetable oils.<sup>209</sup> There has been a steady rise in the market share of tea enhancers to approximately one-third of the packaged milk category.<sup>210</sup> These shifts in product lines are not only more profitable for the companies but have seen a growth as they tap into a key unmet need in consumption habits – that is of the fact that refrigeration for fresh or UHT milk boxes is limited due to the unavailability or unreliability of a regular supply of electricity.<sup>211</sup> Dry milk coffee or tea creamer by contrast is always handy in diverse settings across the country. Nestle's *Everyday -Dairy Whitener for Tea* made from milk solids, vegetables oils and sugar is the country's iconic brand backed by extensive advertising that aims to help consumers make the perfect cup of tea every time.<sup>212</sup> The MPMC's are being called out due to the gap between their initial stated intentions and their actual practices through the extensive push of manufactured dairy products.<sup>213</sup> These practices are increasing profits for them, but

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<sup>206</sup> *Milking the White Revolution*, *supra* note 201.

<sup>207</sup> POLICY PAPER, *supra* note 37, at 2.

<sup>208</sup> *Milking the White Revolution*, *supra* note 201.

<sup>209</sup> POLICY PAPER, *supra* note 37, at 2.

<sup>210</sup> Kamran & Rizvi, *supra* note 68, at 911.

<sup>211</sup> See Fan Zhang, *What's Keeping Pakistan in the Dark?*, WORLD BANK BLOGS (Dec. 13, 2018), <https://blogs.worldbank.org/endpovertyinsouthasia/what-s-keeping-pakistan-dark>; see FAN ZHANG, IN THE DARK: HOW MUCH DO POWER SECTOR DISTORTIONS COST SOUTH ASIA? 171 (2019).

<sup>212</sup> Uzer Khan, *Nestle Everyday*, YOUTUBE (Sept. 2, 2013), <https://www.youtube.com/watch?v=N8eqFzIQEg8>. In this ad, for instance, a husband, after returning home from work, makes a cup of tea with Everyday to pacify his wife who seems to be annoyed at him for having left for work without telling her. *Id.* He apologizes to her for not having called her all day either. *Id.* Milk advertising in general works on highlighting themes of blissful domesticity. This one aims to go beyond traditional gender roles by showing the husband as progressive because he is the one making a cup of tea for his wife. *See id.*

<sup>213</sup> See Pervaiz & Tirmizi, *supra* note 150.

creating less nutritionally sound products for their customers and harming small farmers in the process.<sup>214</sup>

### *E. Swiss and Dutch Conglomerates in Pakistan's Dairy Sector*

As we've seen, Pakistan's two largest dairy firms are foreign companies committed to the professionalization of the dairy value chain along the lines of their (in the case of the Dutch conglomerate, FrieslandCampina that took over Engro Foods in Pakistan, this as we'll see below is not true of its home base in the Netherlands where it is organized as a cooperative owned by its farmer as owners model) global practices.<sup>215</sup> Nestle for instance as we saw is working with commercial banks to finance and upgrade the infrastructure of existing farms, introduce mechanization, and foreign breeds to produce high-yielding animals.<sup>216</sup>

The particular larger operations that this model of professionalized and internationalized dairying privileges will be at the detriment of both Pakistan's smaller dairy producers as well as the small-scale middlemen who operate at relatively local scale to bring milk from dispersed farms to market.<sup>217</sup> Thus, when considering the role of private sector markets, we must distinguish between smaller dispersed middlemen who have traditionally been the conduits to bring milk to markets and the larger professionalized companies selling packaged milk that are moving ever-closer towards actualizing vertical integration within their business models.

#### 1. Engro's Own Farm – foretelling the way forward?

“[Engro] established its own dairy farm in 2008.”<sup>218</sup> As per the company's filing:

[t]he farm covers an area of 557 acres (220 acres owned, 337 acres leased) which is sufficient to house 10,000 animals. It also includes cropping land

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<sup>214</sup> See *id.*

<sup>215</sup> See *Pasteurized*, *supra* note 3; see *Cornall*, *supra* note 3; see *Our Brands*, *supra* note 3.

<sup>216</sup> *Empowering Dairy Farms*, NESTLÉ PAK., <https://www.nestle.pk/csv/ruraldevelopment/agriculture-services/empowering-dairy-farmers> (last visited Nov. 10, 2020).

<sup>217</sup> See *Crossroads*, *supra* note 17, at 76–87.

<sup>218</sup> Engro Foods Ltd., Offer for Sale of Shares 23 (June 24, 2011) (unpublished corporate filing) (on file with author).

for growing fodder. As part of the Company strategy, E Foods (Engro) imported cows for its Dairy farm as opposed to using local breeds. E Foods dairy farm remains one of the largest farms housing 2591 animals at Dec 31, 2010 (1,476 adult cows and 1,035 immature cows and 80 male calves and bulls). Currently E Foods dairy farm is producing more than 20,000 LPD (liters per day). At present, the Dairy farm milk is used in various ambient and powder dairy products. This highest quality milk can be compared to the world's best. The optimal use of this milk will come when E Foods will enter into various infant nutrition products and pursue its exports strategy.<sup>219</sup>

This brief corporate filing shines light on the envisaged future of Pakistan's dairy sector from the perspective of the MPMC's who at present have so much do with shaping it. The company informs us that its entire breed at its farm is imported which clearly shows that for the most part, it is much more efficient to import and house high-yielding breeds than to work with the much slower and uncertain efforts to increase yields of local breeds both through breeding programs and cattle management practices. Given the reliance on government efforts for the purposes of improving local breeds and on individual farmers for any improved management practices and facilities they can build, it is no wonder that corporate houses prefer to internalize the entire operation such that factors are under their control. Importantly, the size of the farm ensures that Engro can grow the fodder the cattle will require on its own land further limiting its reliance on uncertain and external fodder markets. Further, given the size of the average family holding of dairy cattle, a farm that can house 10,000 heads of cattle is clearly huge by comparison and can certainly be said to be organized on a commercial scale.<sup>220</sup> Given the amount of high-quality milk supply that that gives the firm, it thereby reduces its need to collect much smaller quantities from a dispersed group of smaller individual farmers. The question for national and international development policy should become, when such efficiency is the main driver for investments, what happens to the interests of livestock farmers and small farmers who ostensibly are the ones that are being economically uplifted through their participation in commercial milk value chains as President General Parvez Musharraf claimed at the

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<sup>219</sup> *Id.*

<sup>220</sup> See ZIA ET AL., *supra* note 5, at 2–3.

opening of Nestlé's plant.<sup>221</sup> The stakes of this question become even higher when in contrast to more run-of-the-mill traditionally understood development studies, eliminating poverty is also tied to national and international security paradigms such as fighting extremism and terrorism.<sup>222</sup>

## 2. The Origins of a Dutch Cooperative

In 2008 the European competition authorities gave permission to two Dutch dairy farmer cooperatives, themselves the amalgamation of several local and regional cooperatives with origins in the 19<sup>th</sup> century, to form FrieslandCampina, now a major global dairy company whose products are sold in over 100 countries.<sup>223</sup> As they describe the bountiful regions of the Netherlands, their main home (their farmer cooperatives also extend to Germany and Belgium), "Friesland is a region in the north of the Netherlands known for its green meadows, blue skies, many lakes and splendid Frisian dairy herds. Campina is a wooded region of grasslands and meadows in the south of the Netherlands, so named by the Romans more than 2000 years ago."<sup>224</sup> Explaining its origins, the company suggests that dairy farmers in the latter half of the 19<sup>th</sup> century organized themselves in cooperatives in part to help overcome the challenge of getting their milk supplies quickly to markets and customers given the lack of refrigeration.<sup>225</sup> Another reason for the farmers to join forces within a structure of farmer cooperatives was to gain more power in the market compared to when they used to sell their milk to companies.<sup>226</sup> Given their history, they claim that "the member dairy farmers have built an international dairy company that now spans the world."<sup>227</sup>

We can see their sense of importance of history and the value of farmer cooperatives in the dairy sector of the Netherlands. Given the importance of their sense of history and the value of farmer

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<sup>221</sup> Press Release, Nestlé Pak., Nestlé Opens New Milk Factor in Pakistan, Its Largest Milk Reception Plant in the World (Mar. 16, 2007), <https://www.nestle.com/media/pressreleases/allpressreleases/milkfactorypakistan>.

<sup>222</sup> *Id.*

<sup>223</sup> See *Our Heritage*, FRIESLANDCAMPINA, <https://www.frieslandcampina.com.ng/organisation/our-heritage/> (last visited Oct. 9, 2020); see *Our Cooperative: For and By Farmers*, FRIESLANDCAMPINA, <https://www.frieslandcampina.com/our-farmers/dutch-heritage/> (last visited Oct. 9, 2020).

<sup>224</sup> *Our Heritage*, *supra* note 219.

<sup>225</sup> See *Our Cooperative: For and By Farmers*, *supra* note 219.

<sup>226</sup> *Id.*

<sup>227</sup> *Id.*

cooperatives in the overall organization of the dairy sector within the Netherlands. It is important to note that since the company's formation as a corporation, and its attendant overseas expansion, it has not adopted a strategy of organizing the dairy sectors of the countries in which it operates into the cooperative structure of its founding, nor continuing present structure in the Netherlands.<sup>228</sup> The reason it is important to note the difference in the organization of the company in its home jurisdiction and in its overseas operations. In the home jurisdiction, it is owned by the members of the cooperative whose interests it operates. In its overseas operations it is organized as a commercial, for-profit company, engaged in the procuring of raw milk from independent farmers and selling it commercially under its own brands (after its takeover of Engro Foods' milk brands). This illustrates how the company does not extend the cooperative model to the countries they expand their operations to. The disjunct between the organization in the 'home' jurisdiction whose value, in its own words, it clearly recognizes and the non-extension of that beneficial model in Pakistan, makes clear in whose primary interests the firm operates. Highlighting this disjunct is not at all to make the claim that somehow it is the responsibility of the conglomerate to extend the cooperative model to its overseas acquisitions or that only a cooperative model can best serve the long-term interests of small farmers. But, noting the difference in the corporate structure is surely important along the lines of what's good for the goose . . . .

## VI. Encouraging Consolidation

"The dairy industry makes no secret of its objective to have the consumption of loose milk banned altogether. So what should the hundreds of thousands of ragtag milkmen do to get out of the hair of a handful of corporate Goliaths?"<sup>229</sup> A major thrust of IDFA education and training programs is to motivate farmers to improve their cattle management practices, and to consolidate or increase the size of their cattle holdings and dairy farm operations.<sup>230</sup> USAID's funding for a project with the provincial DRDF does just that through a combination of field trainings, arranging for farmer visits to model farms, and training or advertising videos with consistently framed, standardized messages to reach farmers.<sup>231</sup> Through the development

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<sup>228</sup> See *About FrieslandCampina*, FRIESLANDCAMPINA, <https://www.frieslandcampina.com/about-frieslandcampina/> (last visited Oct. 9, 2020).

<sup>229</sup> Alam, *supra* note 10.

<sup>230</sup> CVS NESTLÉ, *supra* note 6, at 28–29.

<sup>231</sup> *Id.*

of these forms of media in which experts, or villagers, who have obtained prior training and are thereby held up as having more knowledge impart teachings to farmers who need to be educated in improved dairy practices. They can be motivated by the new forms of learning and internalize goals for the development of themselves and the industry. In addition, a particular thrust of the videos is how, through improved cattle management practices, the farms can become larger.<sup>232</sup> For instance, one farm improvement practice is to keep livestock under a roof in well-ventilated sheds that are open on all four sides. While exploring their farms for installing such a shed, farmers are encouraged to plan for expansion such that to construct with an eye for expanding their cattle holding.<sup>233</sup> The videos and training models recommend a host of other improvements, but all without any discussion of the costs of such expansion. As if the additional capital investments can be made without any consideration of where and how livestock farmers, or small farmers, could access such financing.<sup>234</sup> As we've seen, the MPMC's have enabled themselves, through partnerships with banks, the very mechanisms via which large investment capital can move into the dairy sector, but of course that capital is only accessible by farmers deemed investment worthy. This highlights the fundamental disconnect between what the programs purportedly aim to do (uplift the existing bulk of livestock farmers and small farmers) versus what they essentially do (encourage private capital at scale to move into dairy development).

#### A. *The Price Gap and Some Tentative Conclusions*

An example of the gap between the gains by livestock farmers and small farmers, compared to the growth of dairy company revenues is illustrative. Engro estimates that an average small farmer provides it with 1,000 liters of milk annually for which the farmer is paid the equivalent of \$480 annually that equals PKR 6,300 or approximately \$40 per month.<sup>235</sup> In 2019 meanwhile, the company reported annual revenues of PKR 28.9 billion or just over \$180 million USD.<sup>236</sup> The structural, institutional, developmental, and

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<sup>232</sup> *Id.*

<sup>233</sup> *Id.*

<sup>234</sup> *See id.*

<sup>235</sup> INT'L FIN. CORP., IFC INCLUSIVE BUSINESS COMPANY PROFILE: ENGRO FOODS LTD. 4 (2014), available at <https://www.ifc.org/wps/wcm/connect/61d3609d-cb53-4b8d-8797-07a62adbfee6/Engro.pdf?MOD=AJPERES&CVID=lv21IJ8>. The United States Dollar (USD) to Pakistan Rupee (PKR) conversion rate being utilized is 1 USD = 160 PKR.

<sup>236</sup> FrieslandCampina Engro posts Rs321m profit for third quarter, PROFIT BY PAKISTAN TODAY, October 16, 2020,

regulatory question to ask is: whether this particular developmental model of the state and market, is in fact operating in the best interests of the farmers, or of consumers and society more broadly.

In essence, there is a significant difference in the average price at which MPMC's buy milk from farmers (Rupees 80 per liter) and the retail price of packaged milk, which is approximately double what the companies pay to farmers.<sup>237</sup> This approximately 100% price markup, the increasing gains to be had from consolidation, and introduction of manufactured non-dairy products may lead the bigger players, either the MPMC's or larger farmers, to move to setup large dairy farms with fully in-house vertical production units. As we've seen this process was initially begun by Nestle.<sup>238</sup> Or, it might enable other private capital to move into intensifying dairy production for which the large companies become the exclusive buyers. Given their larger size, as well as greater ability to procure adequate and nutritious feed, it is clear that larger players will have the ability to move beyond the capacity constraints of small farmers. There are already indications these companies are moving to structure feed markets to meet the higher food needs of livestock presently constrained by the green fodder farmers can, and for the most part have to, grow on their land.<sup>239</sup> Almost certainly, they will also move towards greater mechanization of their large farms with its attendant impacts on animal welfare and the accompanying process of driving smaller farmers out of business because they will be increasingly less able to find ready buyers for their milk supplies. Larger farmers who have the ability to avail of the financing the MPMC's have thus far enabled will likely do well in the formalized dairy value chains that are being created.

Without their own consolidation in the form of cooperatives, as done in India in the early years after Independence in 1947,<sup>240</sup> it is unclear how easy small farmers will find it to survive on even the lowest rungs of commercial dairy production. Perhaps a true White Revolution can only begin through the collective efforts of small

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<https://profit.pakistantoday.com.pk/2020/10/16/frieslandcampina-engro-posts-rs321m-profit-for-third-quarter/> (last visited Jan 28, 2021).

<sup>237</sup> Aamir Shafaat Khan, *Packaged Milk Producers Increase Prices*, DAWN (Feb. 27, 2020), <https://www.dawn.com/news/1536951>. A price-tracking site was used for this comparison. See *Nestle-MilkPak: Live Price Tracking*, SHOPPINGUM, [https://www.shoppingum.com/search\\_t/nestle-milkpak/](https://www.shoppingum.com/search_t/nestle-milkpak/) (last visited Nov. 10, 2020).

<sup>238</sup> Pervaiz & Tirmizi, *supra* note 150.

<sup>239</sup> Field visit observations (notes on file with author).

<sup>240</sup> Anbu Seilan, *Dairy Cooperatives and Dairy Development in India*, in *NON-FARM SECTOR AND RURAL DEVELOPMENT* 428, 431 (Palanisamy Sundararaj ed., 2011).

farmers. For as Pakistan's experience shows us, anything else may be less than revolutionary.