# Dairy in the Philippines

# Milk for community and commodity



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#### **Executive Summary**

- Introduction
  - These policy notes on the Dairy Sector in the Philippines is written on behalf of the Agricultural Office at Netherlands Embassy in Manila and on behalf of AgsPart2020, a livestock consulting agency based in Los Baños. The report identifies possibilities for development of the sector as the Philippines face the challenges of the 21<sup>st</sup> century. The information in this report is based on a series of meetings and visits throughout the country by the author, as well as on additional information from other countries. It aims to set the scene for short term actions and for reflection and decisions regarding future actions on the longer term, say beyond 2020.
- this report briefly covers the past and present, focusing on activities for the short term (next few years), the next decade (medium term) and beyond 2020 (long term). It uses modern system approaches, -methods and -concepts, e.g. on the segmentation of the sector, on the supply chain, inputs / outputs, farm and regional / national level and on biophysical, social as well as aspects such as robustness, resilience and the like.
- the dairy sector in the Philippines can be characterized as 'rather small, fragmented and stagnant', with 1-2% of national milk consumption coming from local supply. The sector is also diverse and not well developed but change seems to be in the air apart from short and long term price fluctuations. Production of milk is technically feasible even while facing many odds. Dairy is not yet recognized as a significant growth sector and it faces an uphill battle by imitating developments in other countries. Great opportunity is missed if the potential of dairy continues to be lost in indifference, ignorance and copying what others do. I argue for opportunities in Philippine dairy that dares to use its strengths rather than to get lost in its weaknesses and in copying from other countries.
- The diversity, fragmentation and weak development of [parts of] the sector offer opportunities that may take lessons from other countries but that might also serve as guide for other countries. For example, regional and social diversity of production systems calls for tailor made approaches, including design of marketing systems for supply of large cities, development of local brands, integrated systems for sustainable rural development with milk for community, as well as a few specialized farms to produce milk as commodity for cities. Availability of cheap milk powder from other countries can help build a base for local fresh milk and the sector might seek ways to use rather than to fight cheap imports.
- The role of the government through agencies like the NDA can continue to be crucial in certain aspects, but it also needs revision to cope with challenges ahead. Three main shifts from past to future policies might be that a) dairy is becoming a crucial tool for development rather than being just another option, b) traditional and implicit emphasis on standard approaches to issues like breeding, feeding and marketing can shift to tailor made approaches, also in terms of diversity in production systems and chains, and c) seeking new synergy with the capacity for self-organizational in the sector (from control to facilitation)
- production systems and dairy chains are discussed by using many ways to distinguish between dairy farms, based on region, altitude, farm size and farmers attitude, degree of integration with cropping, animal species. Each of

- these distinctions is discussed, but the main emphasis is on dairy for large versus local markets, and on milk for commodity (cheap milk for urban consumers) versus community (milk as engine for rural development). The difference between goats, buffaloes and Holsteins is relevant but made subject to the grander vision of what is wanted and needed.
- Challenges and visions are many, for short and long term. Immediate short term challenges are, among others, the lack of government priority attention to the sector, the competition with imported powder milk, the poor state of the dairy gene pool, a stagnating state of the sector (not speaking of good exceptions), the long term investments needed for dairy development while many individuals in reality wish to at least temporarily leave the country for greener pastures abroad. Apart from many other practical farm level issues the sector also has to brace for challenges in terms of climate change, the need for rural development and increasing population densities, resource crunches with scarcer clean water and costlier inputs based on fossil fuel. The vision can, however, be to use these challenges as opportunities where dairy fits a perfect niche to serve for rural development (milk for community), where it can help recharge natural resources and where it can be a hedge against climate change rather than an added risk.
- Policies for dairy development imply choices to support local initiative and diversity versus emphasis on national grids and standardization, to focus on farm and chain development rather than on components such as breed, feed etc., to critically seek crucial inputs from outside while building on what can be supplied from inside (nucleus herds), to effectively assist and highlight existing pilots that are successful, to encourage local initiative rather than to be overprotective, to chose for dairy as means rather than goal of development, to set legislation that gives fresh milk its proper place against (otherwise) valuable imports of what is NOT fresh milk. ...

#### 1. Introduction

Dairy production has been done in the Philippines for at least a century, but never on a large scale and as tradition as in neighboring countries like Indonesia or Malaysia, in India, more recently in China, Thailand and Vietnam, leave alone temperate countries as in Europe, the Pacific or the Americas. The country is not well suited for large scale production, due to climate and tradition, but great opportunities are missed if dairy is dismissed as a valuable vehicle for development and local fresh milk foods.

This report is written on behalf of the Agricultural Office at Netherlands Embassy in Manila, based on notes and impressions during two years frequent interaction with people from the sector in different parts of the country. It is all written as part of the commitment of the author to the mission of the 'AgsPart2020' (www.agspart2020.com), a consulting agency based in Los Baños serving the needs of Philippine livestock sector with initial emphasis on the dairy sector. The report identifies possibilities for development of the sector as the Philippines face the challenges of the 21<sup>st</sup> century. The report aims to set the scene for short term actions and for reflection and decisions regarding future actions on the longer term, say beyond 2020<sup>1</sup>.

This scope of this report is to briefly cover past and present of dairy in the Philippines, with focus on activities for the next few years (short term), the next decade (medium term) and beyond 2020 (long term). It uses modern system approaches, -methods and -concepts, e.g. on the segmentation of the sector, on the supply chain, inputs / outputs, farm and regional / national level and on biophysical, social as well as aspects such as robustness, resilience and the like. Not too much time is spent on numerical information since much of that would either be a repetition of available information<sup>2</sup>, and also because much of that information is unreliable partly because of rapid changes.

Suggestions for action as expressed in this document are and meant to trigger debate and action without claiming to be comprehensive or final. Comments are welcome and thanks are due to numerous people who were patient enough to accompany the consultant to several nooks and corners of the country, pleasant enough to make the visits enjoyable and critical enough to make the discussions constructive. Most thanks are due to Cesar Sevilla, Ben Molina and Joey Molina but many more could be mentioned.

<sup>&</sup>lt;sup>1</sup> This year 2020 is a 'metaphor' for a short term beyond which there will be many changes to be anticipated in the work of the coming decade. It is also used in the name AgsPart2020 of the Consulting Centre that was started in 2009, partly with funds from the Netherlands Government

<sup>&</sup>lt;sup>2</sup> See ..., ..., ...

#### 2. The sector characterized, past present and future

The present state of the dairy sector in the Philippines is ambiguous to say the least. Some dynamic entrepreneurs manage to show what is possible while recent surges in demand for fresh milk in 'Starbucks'-type coffee-shops have boosted the enthusiasm among producers, young people flock to milk bars and ice cream parlors, and pressure is felt to redefine 'fresh-milk' so as to favor local milk over imports. Others in the sector are tired, they 'sigh' and complain that most of this is done and seen before, that milk powder is the preferred because it is so easy, that not enough dairy type animals are available, that imports of live animals are inefficient. To make matters worse, the training of young dairy managers tends to cater for people that intend to emigrate as farmhands and milkers to countries with 'greener pastures' such as New Zealand. Is the sector in a stage of crisis or opportunity?

In numbers and impressions one can say that the sector is rather fragmented, small and stagnant, offering both problems and opportunities. Fragmentation has to do with low levels of organization, lack of tradition and difficult inter-island trade. Only some 1-2% of national milk consumption comes from local supply with little real growth over the past decades (table ..). Imports of milk-products are cheap and legislation does not distinguish between 'fresh' milk imported as milk powder or freshly produced locally. The sector is diverse with larger producers near cities mainly in Luzon or even transporting fresh milk (blast frozen) from Mindanao to an eager market of coffee shops in Manila. Milk can be produced everywhere but some of the more [potential] producer regions are in high rainfall hills at several hundred meters altitude of Mindanao. Others are in hot and lowland almost semi arid regions of Quezon and it would be interesting to further study the potentials in yet unexplored areas such as the North Eastern hills of Luzon.

The sector counts some 10-20 larger farmers of 50 – 100 cows with between 4000 and 8000 lts/yr, of sometimes changing ownership and some 25 cooperatives of which some have more than 500 members that only produce approx. 300 liters daily. Regular imports of live dairy animals (mainly crosses from New Zealand) are costly but not effective in increasing the gene pool of the dairy stock. Government run organizations like the National Dairy Authority and the Philippine Carabao Centre do their part in assisting the sector, partly with commendable school milk programs but large scale impact is yet to be seen. A non-governmental organization called DairyCon does its part in stimulating the industry, among others by collaborating with NDA to organize yearly 'dairy-expos'.

Opportunity exists in the fact that private entrepreneurs and individual small farmers show that milk production is possible. Also, there appears to be an increasing demand for real fresh milk, from coffee shops and from urban and/or young consumers of added value products. The poor performance and low utilization (often below 30%) of existing processing capacity offers opportunity for rapid change, a low hanging fruit if right measures are taken (see ...). Just a few example:

- high calf mortality is not a technical problem since some producers show that good calf rearing is quite well possible (photo ..). Measures to change such a bottleneck should not only be to tell farmers how to better rear their animals. They should also address issues on what keeps them from doing a better job

. . . .

- the often disappointing results of the live-cattle imports implies that other avenues must be available that might dramatically improve the situation, whether by importing semen and/or embryos (only for isolated cases), by establishing and/or improving government / private nucleus farms (photo ..)
- complaints that cheese does not sell well because the size is too large can be solved with other moulds, and the fact that very simply packaged milk (photo) is sold out immediately shows that [potential] demand exists
- the increasing pressure on the land and the opportunities of dairy for added value come together in the large tracts of un-used land under coconuts and/or on hill sides that can be developed.

Not all is easy and failure is certain if standard methods are applied from conditions that are alien to the Philippines. But taking good lessons from existing farmers in the country (on do's and don'ts), as well as from other countries offers scope for dairy as an additional option for sustainable development (see ch ..). That includes lessons from farmers that re-discover the value of strong and medium producers rather than only turbo-cows (photo ..), from countries with intensively specialized units that re-discover the advantages of nutrient recycling with and without mixed farming (photo ...)<sup>3</sup>, or from places in the world that promote a new balance of national milk-grids with local food (photo ..).



Photo's: good calf rearing in the Philippines, nucleus farm Ben Molina, poor milk packaging by PCC central Mindanao, cheese of wrong size, mixed farming in the US and MontBeliard at Lelystad

Another potential opportunity is that dairy is not yet recognized as a significant growth sector. Government appears to have supported dairy development off and on, but policies appear to have been inconsistent. Changing that by setting explicit and consistent government support will open new avenues and it may trigger critical change so that the sector can become more self propelling. One typical policy choice is the need to redefine legislation regarding 'fresh milk', giving local producers an advantage in the fresh market. Another is to see dairy not only for its value in terms of milk, but also as a vehicle for local development. A third policy choice is to seek for tailor made approaches, because Philippine dairy would face uphill battle by imitating developments in other countries. Great opportunity is missed if the potential of dairy continues to be lost in indifference, ignorance and copying what others do.

The diversity, fragmentation and weak development of [parts of] the sector offer opportunities that may take lessons from other countries, also serving as guide for other countries. For example, regional and social diversity of production systems calls for tailor made approaches, including design of marketing systems for supply of large cities, development of local brands, integrated systems for sustainable rural

<sup>&</sup>lt;sup>3</sup> Aarts, 2001, AsaMix .. and other publications

development with milk for community, as well as a few specialized farms to produce milk as commodity for cities. Availability of cheap milk powder from other countries can help build a base for local fresh milk and the sector might seek ways to use rather than to fight cheap imports.

The role of the government through agencies like the NDA can continue to be crucial in certain aspects, but it also needs revision to cope with challenges ahead. Three main shifts from past to future policies might be that a) dairy is becoming a crucial tool for development rather than being just another option, b) traditional and implicit emphasis on standard approaches to issues like breeding, feeding and marketing can shift to tailor made approaches, also in terms of diversity in production systems and chains, and c) seeking new synergy with the capacity for self-organizational in the sector (from control to facilitation)

# 3. Production systems and dairy chains.

#### 3.1. Introduction.

Dairy production and consumption in the Philippines is a variable 'bunch', not a uniform set of activities even if common characteristics can be found. The Philippine dairy sector is not an exception to the rule, however, and much can be learnt from other conditions and sectors. Indeed, all production systems and supply chains are basically similar in structures, around the world as shown in fig .. and .... Diagrams like these can be made for systems at animal level (cows, goats, buffaloes), farm level (mixed, small, large), village or regional level and the like. The first of the two diagrams explicitly includes attention to social-, psychological- and ecological values as part of the 'people, planet, profit' notion, also called 'multiple-goal' approaches. Such and approach reflects policy choice between 'commodity and community' .. i.e. for only milk or also for a combination of social and ecological values (to name a few).

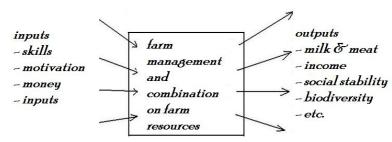


Fig .. a diagram to represent the dairy production system, at farm as well as regional and national level.

#### 3.2. The production system at farm level.

The diagram in fig .. shows many factors involved in the resource flow and output of the dairy production system. Many discussions in the Philippines tend to focus on only one or two of these, i.e. genetic resources and marketing of milk. However, a more integral approach might be needed for example relating breed and genetic resources to the feed situation as these differ from place t place and milk sales as part of the output, also including aspects of meat, calves and even dung or social stability in communities. Some of the individual aspects are elaborated below, to be followed with suggestions for more integral approaches.

#### 3.2.1. Skills and motivation

Much needs to be done here but not just by providing more technical training. Skills are available in selected farms, often based on previous work in foreign countries. Training for more skills continues to be needed, e.g. for issues like whole farm management, perhaps especially in schools and universities, also for government officials who often lack the capacity to understand the farm as a whole. And even on whole farm management some expertise is available, again with the few entrepreneurs that have shown to be capable in running dairy farms of smaller and larger size. Such available expertise can be the basis for training of dairy-farmers 'to be' as they already do in practice. In all cases the available skills tend to drain away, however, training centers being geared to train workers for jobs abroad rather than for work inside the country. Suggested lines of action are to create a stable policy on dairy development, protecting the [prices at the] fresh milk market (see ...) and shifting training and R&D efforts away from work on details towards work on whole

farm issues and planning for changes such as occasioned by climate change, CO2 capture, shortages of fresh water, need for more intense and sustainable cultivation of the land under increasing population pressure.





Fig .. existing dairy farms with reasonable management ...

#### 3.2.2. Money and loans.

Subsidies are out of fashion (for the time being) but alternatives are available to strengthen the dairy sector and to make it more viable as well as self-reliant. Development of [small] dairy farmers can be sort of self-propelling if a) prices are right and if b) gradual development is chosen over crash programs. Pricing starts with a focus on low cost production areas, and with a price policy that gives an edge to fresh milk. Many countries in the region have supported local milk production by protective measures, e.g. linking import quota for milk powder with production and intake of local milk. What happens now is that so-called fresh milk is brought in from other countries, doing unfair competition (see markets ..).

Especially smaller farmers do not benefit much from subsidized imports of for example large dairy cattle. That is a risky proposition and the small farmer has to pay rather than to get benefit. Low cost and slower processes such as use of AI may bring more benefit on the long term. And most of the larger farmers should be capable to finance their farms via existing channels. Last but not least, it may be better to avail smaller farmers with dairy animals by 'saving rather than borrowing', i.e. to assist by providing young stock that is to be raised or better via use of AI on existing animals to produce cows locally ......

3.2.3. Physical inputs like feed, breed, seed and veterinary care This implies thinking in different lines of action, for different dairy production systems as elaborated in .. and the associated matrix.

#### 3.2.3.1. feeding

One should distinguish major production systems with favorable climates such as in central Mindanao (Bukidnon), the hotter but still wet coastal areas where forage quality is insufficient for high yielding cows, and regions with long dry seasons where feed conservation is required. A special case are the areas close to the market<sup>4</sup> where it is relatively easy and profitable to buy concentrated feeds from the city (increased distance to the city tends to imply lower produce prices and higher prices of inputs such as feeds).

Areas somewhat distant fro cities depend primarily on roughage as the main source of feed since concentrates there are relatively expensive expect where agro-industrial

<sup>&</sup>lt;sup>4</sup> Distance to the market is a matter of physical distance (kilometers to the market) and of socio-economic distance. For example, a small farmer in Quezon may find it harder to access the Manila market than an entrepreneur in Bukidnon who can even freeze blast the milk to be transported by air to Manila.

wastes are available if not better used by pigs and poultry (e.g. rice bran, reject bananas and ....)

The roughage areas can then be distinguished as in table ..., each with its own strategies. Policy recommendations include to say that teaching and R&D should focus on the variation of systems, as well as on methods for more sustainable forage production, in line with local needs and ecologies. Much if not all information on feeds and fodders is available, e.g. in the work on terracing (SALT), crop-residue feeding and grass-legume mixes under coconuts (..., ..). The trick for policy is to trigger R&D into work to better understand / promote these different technologies in terms of their place in food security (facing uncertainties of climate change), nutrient cycling (excreta management and nitrogen capture as well as nutrient pumping from the subsoil), erosion management and community aspects BLA BLA





Fig. Crop residue feeding is not new especially were draught animals are kept in mixed farming systems, .. urea treated straw has limited application but it might be relevant in the more arid areas of Luzon (Quezon and upwards) .. grass legume mixtures under coconuts

Table .. Different interventions for fodder in different farming systems, with special reference to dairy production

	production						
	Hilly humid	Lowland humid	Regions with	Mixed farming			
	regions	regions	prolonged dry	(with crops)			
			season				
Tropical forages	Very relevant,	Very relevant,	Relevant but also	Relevant as small			
like napier,	with special need	with special need	need for dry	area for additional			
legumes,	to fit energy feeds	to fit energy feeds	season feed like	good fodder or as			
	into the rations	into the rations	cane silage is to	intercrop, but			
			preserve excess	more attention			
			feed, not to have	needed to better			
			good feed in the	use crop-residues			
			dry season				
Crop residues like	Not so relevant,	Not so relevant,	Very relevant,	Very relevant,			
straws	unless dry and	unless dry and	with adjusted	with adjusted			
	well harvested	well harvested	production levels	production levels			
Tree-leaves			Good as	Integral part of			
			supplementary	feed base e.g. for			
			feed	pumping action of			
				the trees			

#### 3.2.3.2. breeding

The breeding situation appears to be rather pathetic on several counts. Much quibbling goes on in terms of which animal is needed rather than to aim for a broad genetic base. Another issue appears to be that he present imports of live animals tend to be problematic in terms of genetic quality, .... Still another issue is that the

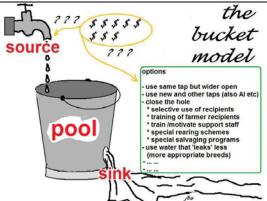
survival rate of imported animals, especially beyond one or two lactations is abysmal (unless otherwise proven). .. Still another is that cheaper but more long term options such as use of artificial insemination are hardly considered .... The summary is given in the bucket model of box ... and essentially not much difference exists between buffaloes and dairy cattle although the buffalo sector appears to have a more systematic and consistent approach .. consultant does not know enough of that ...

Box .. The bucket model applied to the management of genetic resources in the dairy sector of the Philippines.

Management of dairy genetic resources in the Philippines looks like a bucket with a tap (source) that runs water into a bucket having a huge hole (sink). The genetic materials cost much money (with live animals rather than semen and/or embryos, even bringing in only half the dose of genetic quality that is available in semen). The quality of the X-bred imports is disputed all around the islands while loss (=sink) of genes seems to be high. Combining a slow source with a fast sink implies a difficult mission to maintain the pool.

Options for increasing the 'source' are to further open the same tap, i.e. importing more of [expensive] live animals (not preferred). Other options are to also consider other ways of importing genetic resources (artificial insemination and/or embryo transfer, all for selected farms). Last but not least, a better use of existing 'nucleus herds' and breeding stations whether private or public is top priority. Potential nucleus herds are ranches and former beef stations ...

Options for closing the sink are to more selectively chose recipients, to better prepare / train / motivate recipients and support staff, to adopt special rearing schemes and /or calf salvaging programs.



Other options for reduced 'leakage' (less 'sink') use of more appropriate animals, in other words 'water that leaks less', combined with better management. Present imports recognize that by focusing on import of crossbreds but surprisingly little attention appears to be given to use of rustic breeds such as Jerseys, Brown Swiss.

Fig.. a bucket model on the management of genetic resources

Policy options include actions on calf salvaging, training of farmers, choice of resistant breeds, use of nucleus herds ... None of these alone is the answer and combinations may be suggested, depending on the .. also on calf rearing as elaborated in a session with various people from the dairy sector in a joint meeting of NDA, AgsPArt2020 and DairyCon (fig ..)



\$	SINK SOURCE	FLEXIBLE OR STABLE	CH4	Water	belie	Design Ti
PCC buffalo aspor	OK	flex	?	OK	OK	16 00
Romahiy with Youd		yes	7	?	OK	4 0
Lange Specialized	-		7	04	CH	99
small mixed	POS	Plexitic STARY	Strate of the	364		
thort was chain	+ '				1	1

3.2.3.3. Veterinary care

3.2.3.4. Housing design

3.2.3.5. ...

## 3.3. Variation, opportunity rather than problem

Variation is a major point of departure in this report, however, calling for different ways to distinguish between dairy farm types, based on region, altitude, farm size and farmers attitude, degree of integration with cropping, animal species. Also consumers come in different types and so come the supply chains.

#### 3.3.1. Dairy Systems

Many different types of dairy farming systems and chains were distinguished in the course of this study but focus is needed and our emphasis in the discussions tended to be on:

- dairy for large versus local markets, reflecting differences between supermarket and wet-markets,
- milk for commodity (cheap milk for urban consumers) versus community (milk as engine for rural development). .

The difference between goats, buffaloes and Holsteins is relevant but made subject to the grander vision of what is wanted and needed.

#### 3.3.2. Dairy Chains

The notions of chains are fashionable but not without reason. To much attention tends to be spent on only issues of production and even quality control. Too often technicians and policy makers focus on part of the chain without having an integrated look at the chain as a whole. They importance of the market may even have been overlooked and both markets as well as chains were been taken as monolithic notions rather than as variable entities of consumers, private entrepreneurs and opportunities (fig ..).

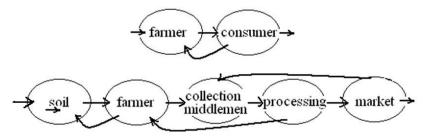


Fig. short and long chains with more or less direct feedback from consumers to producers.

No special study is known in the public domain to distinguish different milk consumers in a rather rigorous way. However, one may guess that mothers of poor families will continue to use milk powder based milk being produced cheaply in New Zealand even when students and young urbanites might prefer locally branded [added value products of] local fresh milk.

Also the chain exists in many different forms, each with its specific opportunities and we suggest that at least three types of fresh-milk chains can be distinguished (with the second one divided into private and semi-government run):

- short and small scale informal chains with direct link between consumer and producer. It is hard to quantify the size of this informal market but consultant assumes that direct marketing takes a large chunk of the fresh milk produced on mainly smaller farms that are part of the co-operatives. Only left overs from this market appear to be channeled to the cooperatives.
- organized longer chain markets run via both cooperatives and private entrepreneurs. Cooperatives are 'officially private' but to an outsider they give the impression of being 'government run' with low levels of management and efficiency (with special cases of well motivated staff!). Still, in some cases NDA (=government) successfully became part of co-operative management to improve operations. Total volume of milk flow through co-operatives is very small considering the number of members. Not all members are active members but one has the impression that only a small amount is handled via the co-operative, the rest being marketed per convenience. By failing to attract the larger volume many cooperatives run at very low capacities (20-30% of total plant capacity is a rough guess). In this way the overhead is too heavy on the few liters produced and farmers prefer to sell the milk directly just keeping the co-operative for standby and secondary benefits. This kind of chain is run partly by NDA for dairy cattle and by PCC for buffaloes. ..
- Organized longer chain markets run by private entrepreneurs are known, and in consultant's opinion they have the future by also tapping into local fresh markets and production of added value products. ...
- Short chains with rather direct link between producer and 'consumer', being more formal than smaller scale ones mentioned before. It is the chains where entrepreneurs tap a large proportion of fresh milk from large producers to be sold to coffee shops (like Starbucks) ... In some case it is the producer himself that directly packages and sells via supermarkets, as is the case of the goat farm Alaminos

The future of fresh milk lies in all these forms, each with a different niche (table ...). Severely underestimated, in consultant's view is the potential for 'locally branded' fresh milk and milk products. One direct dairy outlet at Central Mindanao could gain much by better packaging and advertising but as the story goes: we have too much demand already. Carrying milk from one island to another is [sort of] silly considering the need for transport logistics (even if it is done in one particular and interesting case). It is also 'silly' in view of the need to shift into more environmentally friendly ways of [local] production and of the need / possibility ot create local markets.

Production of local mil to replace milk powder is non-sense for the time being

Chain type	description	Policy action			

Table .. Four chain types and their potential with suggested action for policy

### 4. Challenges and visions

Immediate short term challenges are, among others, the lack of government priority attention to the sector, the competition with imported powder milk, the poor state of the dairy gene pool, a stagnating state of the sector (not speaking of good exceptions), the long term investments needed for dairy development while many individuals in reality wish to at least temporarily leave the country for greener pastures abroad. Apart from many other practical farm level issues the sector also has to brace for challenges in terms of climate change, the need for rural development and increasing population densities, resource crunches with scarcer clean water and costlier inputs based on fossil fuel.

The vision can, however, be to use these challenges as opportunities where dairy fits a perfect niche to serve for rural development (milk for community), where it can help recharge natural resources and where it can be a hedge against climate change rather than an added risk.







Goats are successfully milked at a large farm while also offering opportunities for poorer sections of the rural people (left), a good and well managed dairy herd ready to serve as successful pilot and also ready for the next step in the otherwise challenging partly arid lowland conditions of Quezon (centre), and processed buffalo milk with a market that is so eager that fancy marketing and attention to 'looks of the project' is not yet crucial.

# 5. Policies for dairy development.

Choices need to be made to support local initiative and diversity versus emphasis on national grids and standardization, to focus on farm and chain development rather than on components such as breed, feed etc., to critically seek crucial inputs from outside while building on what can be supplied from inside (nucleus herds), to effectively assist and highlight existing pilots that are successful, to encourage local initiative rather than to be overprotective, to chose for dairy as means rather than goal of development, to set legislation that gives fresh milk its proper place against (otherwise) valuable imports of what is NOT fresh milk. ...

#### 6. Conclusions

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The role of the government through agencies like the NDA can continue to be crucial in certain aspects, but it also needs revision to cope with challenges ahead. Three main shifts from past to future policies might be that a) dairy is becoming a crucial tool for development rather than being just another option, b) traditional and implicit emphasis on standard approaches to issues like breeding, feeding and marketing can shift to tailor made approaches, also in terms of diversity in production systems and chains, and c) seeking new synergy with the capacity for self-organizational in the sector (from control to facilitation)

production systems and dairy chains are discussed by using many ways to distinguish between dairy farms, based on region, altitude, farm size and farmers

attitude, degree of integration with cropping, animal species. Each of these distinctions is discussed, but the main emphasis is on dairy for large versus local markets, and on milk for commodity (cheap milk for urban consumers) versus community (milk as engine for rural development). The difference between goats, buffaloes and Holsteins is relevant but made subject to the grander vision of what is wanted and needed.

Challenges and visions are many, for short and long term. Immediate short term challenges are, among others, the lack of government priority attention to the sector, the competition with imported powder milk, the poor state of the dairy gene pool, a stagnating state of the sector (not speaking of good exceptions), the long term investments needed for dairy development while many individuals in reality wish to at least temporarily leave the country for greener pastures abroad. Apart from many other practical farm level issues the sector also has to brace for challenges in terms of climate change, the need for rural development and increasing population densities, resource crunches with scarcer clean water and costlier inputs based on fossil fuel.

The vision can, however, be to use these challenges as opportunities where dairy fits a perfect niche to serve for rural development (milk for community), where it can help recharge natural resources and where it can be a hedge against climate change rather than an added risk.

Policies for dairy development imply choices to support local initiative and diversity versus emphasis on national grids and standardization, to focus on farm and chain development rather than on components such as breed, feed etc., to critically seek crucial inputs from outside while building on what can be supplied from inside (nucleus herds), to effectively assist and highlight existing pilots that are successful, to encourage local initiative rather than to be overprotective, to chose for dairy as means rather than goal of development, to set legislation that gives fresh milk its proper place against (otherwise) valuable imports of what is NOT fresh milk. ...

References and suggested reading