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Coexistence and Confrontation of Agricultural and Food Models

A New Paradigm of Territorial Development?

Foreword by Jan Douwe van der Ploeg
With the Editorial Support of Sylvie Zasser

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Chapter 13

Governing the Coexistence in a Transition Economy: Trade-Offs Between Smallholders and Mega Farms in the Vietnamese Dairy Sector



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Vietnam has been undertaking a transition towards a ‘socialist-oriented market economy’ for the past 30 years.¹ What impact is this transition having on the diversity of the forms of agricultural production? How does this experience shed light on the coexistence of agricultural and agrifood development models?

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Table 1 Changes in annual milk production in six Asian countries (tonnes)

Year	1990	2000	2010	2017	Ratio 2017/1990
Bangladesh	1,593,503	1,507,310	2,035,550	2,005,405	1.3
Indonesia	599,155	1,009,289	1,492,848	1,540,200	2.6
Thailand	130,278	520,115	911,000	421,961	3.2
India	53,678,000	79,661,000	121,847,000	176,272,357	3.3
China	6,820,400	11,986,000	40,803,769	34,469,224	5.1
Vietnam	60,471	84,525	338,662	909,103	15.0

Source FaoStat (2019)

As in most countries of the former communist bloc, any transition corresponds to a radical change in political orientation, especially in economic matters. Vietnam witnessed profound reforms following the rolling out in 1986 of the *Đổi Mới* ('Renovation/Innovation') policies adopted by the Vietnamese Communist Party. This transition to a 'post-socialist' Vietnam is still ongoing (Fortier & Trang, 2013). It is profound, gradual and concerns many sectors. In addition to the economic transition, there are several other transitions taking place, pertaining to demography, food, technology and agriculture, even if these stylised processes are, in fact, part of a more complex reality (Lagrée, 2010).

The analytical framework provided by the multi-level perspective on sustainable transitions allows these multi-dimensional changes to be considered as a 'sociotechnical transition' (Geels, 2004; Geels & Schot, 2007). This framework is especially suitable for analysing long-term transitions in the agricultural sector and their impact on sustainable development (Darnhofer, 2015). In particular, it is important 'not to consider the transition only as a comparison between two situations isolated in time, but to understand what happens during the transition: the state of change' (de Terssac et al., 2014).

The multi-level perspective suggests taking into account three components (or 'levels') that determine the dynamics of change. First, the sociotechnical regime is defined as a coherent set of practices, techniques and social rules. The qualifier 'dominant' is sometimes used to express the pre-eminence of one type of regime at a given point. Second, niche innovations reflect a radical departure from the dominant regime, sometimes at the local level, and have the ability to challenge the dominant regime. And third, the sociotechnical landscape determines the general context, the conditions outside the regime, such as overall demographic and environmental trends, political orientations, social values, etc. This landscape evolves as a result of decisions or shocks, or under a general influence of trends (Geels, 2004; Geels & Schot, 2007).

We propose to address the transition taking place in Vietnamese agriculture through a case study of its dairy sector. This sector is interesting because of the rapid pace at which changes have taken place. Between 1990 and 2017, milk production in Vietnam increased 15-fold, making it the highest growth rate in the dairy sector in Asia (Table 1).

This chapter is a synthesis of multi-disciplinary studies conducted between 2014 and 2016 on the evolution of the dairy sector in several Vietnamese regions. It encompasses field surveys with different stakeholders (livestock farmers, milk processors, milk collectors, and local and national policymakers). The studies analysed farm trajectories (Khanh et al., 2016) and the transformation of agri-chains and territories (Duteurtre et al., 2015, 2017; Huong et al., 2017).

1 The *Đổi Mới* Policies and Support for the Peasant Farming Model

The development of the peasant farming model was a result of the *Đổi Mới* reforms, whose aim was to give wings to individual initiatives at the expense of collectivist organisations, which were deemed inefficient.

1.1 *Peasant Farms at the Heart of the Post-Đổi Mới Dairy Economy*

Up until the advent of *Đổi Mới*, dairy farming remained the exclusive domain of ‘State farms’ (*Nông lâm trường*), some of which were the result of the nationalisation of erstwhile colonial farms (Duteurtre et al., 2015). The re-emergence of household farms (*hộ nông nghiệp*), and the official recognition of their role in the Vietnamese dairy sector, was made possible due to the gradual rollout of the political, economic and land reforms of *Đổi Mới*. The continued existence of ‘home gardens’ under the collectivist system had allowed a significant residual peasant economy to survive from as early as the 1970s and 1980s. Dairy farming, however, was yet to penetrate this domestic economy (Brocheux, 2009).

It was the 6th National Congress of the Communist Party of Vietnam, held in 1986, that approved a change in policy orientation. In 1988, resolution no. 10 of the Communist Party recognised family farming as the principle model for agricultural production, and allowed peasants (*nông hộ*) to market their produce directly. The Land Law of 1993 established the term ‘private land use right’, defined around limited duration land leases. Certificates of land use rights (*giấy chứng nhận quyền sử dụng đất*), also known as ‘red books’ (*sổ đỏ*), were issued for a renewable period while the land remained State property. This land tenure system allowed for the redistribution of part of the collective land to families ‘in proportion to the number of eligible persons per household’ (Gironde, 2008). These land reforms led to a rapid development of private agricultural production. In 2006, there were 10.46 million agricultural households farming an average area of 0.9 ha (GSO, 2018).

In the dairy sector, these reforms resulted in the growth of peasant dairy farms within the boundaries or on the peripheries of former State farms. These government

farms, which had experienced considerable management difficulties, were converted into research and development centres (case of Ba Vi farm) or into semi-private firms (e.g. Moc Chau farm). The farms' cows were given to former workers or newly settled peasants. A small number of government farms were sold to private entities (e.g. Son Dong farm).

In order to support this movement, the National Dairy Development Plan (NDDP), launched in 2001, placed the development of rural families at the heart of its strategy. This plan² succeeded in strengthening public structures responsible for supporting farms: credit to purchase heifers, technical training, and subsidies for equipment and inputs. At the same time, several public investment programmes sought to strengthen rural infrastructure.

This post-*Đổi Mới* regulatory context allowed the development of individual peasant projects, and was accompanied by major investments in the dairy sector by domestic private firms (such as Vinamilk and IDP) and by international ones (such as Nestlé and Dutch Lady). These firms bought the milk while providing industrial feed and credit. This association between peasants, firms and local authorities helped increase the national milk production fivefold between 1990 and 2010. In 2010, there were 20,000 dairy farms each with an average of 6 cows. These farms produced a total of 328,000 tonnes of milk per year (Fig. 1).

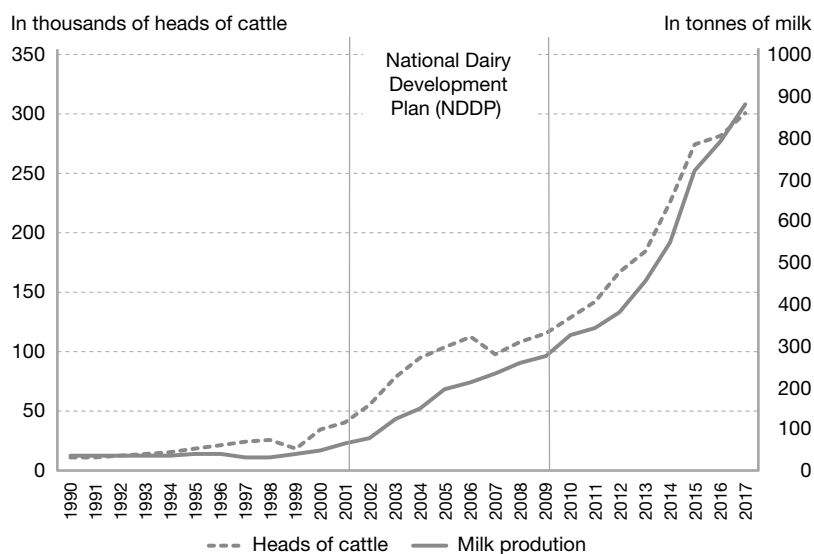


Fig. 1 Development of the national dairy herd and milk production in Vietnam from 1990 to 2017. Source GSO (2019)

² Ratified by decision no. 167/2001 of the Prime Minister.

This expansion of the peasant dairy sector was based on technical solutions adapted to the local constraints of very small farms of less than a hectare. Stable rearing of Holstein crossbred cows that were trough fed with a mixture of industrial concentrates and green fodder formed the basis of this highly labour-intensive system. The practice of cultivating elephant grass (*Pennisetum purpureum*), which can provide high yields on very small areas, quickly spread, thanks in particular to the development of a highly productive hybrid variety (VA06), soon followed by the adoption of fodder maize cultivation. The growth of small farms was accompanied by the emergence of a territorial network of upstream and downstream service companies that made this agricultural development possible: milk processing units, dairy industries, feed concentrate manufacturers, collectors and traders. The emergence of this local private agrifood sector also benefited greatly from the complementary provision of local public services to livestock farmers, with the NDDP and other extension projects facilitating training, access to credit and equipment for livestock farmers in the main milksheds (Duteurtre et al., 2015).

1.2 A Period Marked by a ‘Peasant’ Sociotechnical Regime

Thus, from 1993 to 2008, dairy farming in Vietnam was dominated by a sociotechnical regime that can be described as ‘peasant’. This regime was characterised by a combination of a coherent set of practices, techniques and social rules (Table 2). This period also corresponded to a ‘rehabilitation of the household economy’ (Gironde, 2008) or, in other words, to changes in collective norms and values. A new model of agricultural development emerged, based on a social conception of agriculture’s role and on a new demand for diversified foods that were synonymous with health and modernity, such as dairy products. These changes in values were reflected in several regulatory changes and the implementation of public policies in favour of individual dairy farms.

The emergence of this rural regime was a response to a radical change in the sociotechnical landscape (crisis of the collectivist economy, advent of a market economy) that led to the implementation of new regulations and policies favouring household farms and private trade. The emergence of this regime, during the 1990 and 2000 decades, can also be interpreted as the result of several niche innovations that appeared during the crisis of the collectivist system: the continued existence of ‘home gardens’ from the 1970s onwards, and the emergence of ‘production contracts’ in the early 1980s (Fig. 2).

Table 2 Characterisation of the two sociotechnical regimes in the dairy sector from 1986 to 2019

Domains	Sociotechnical components of the 'peasant' regime (1986–2008)	Sociotechnical components of the 'corporate' regime (2008–2019)
Livestock practices	Intensive production practices based on in-stable rearing of crossbred dairy cows, purchase of industrial feed, intensive cultivation of green fodder	Intensive family-run commercial farms and industrial mega farms based on in-stable rearing of purebred Holstein cows, fed with a mixture of concentrate and silage
Organisation of the economy	Liberalisation of domestic markets , regular sales of collected milk to industry Construction of a mixed private–public economic fabric consisting of State enterprises, technical services, private firms, SMEs Development of a mass retailing system (shops, supermarkets) and the appearance of new consumption practices	Opening of markets to foreign competition through trade agreements and the establishment of health standards. Price-driven competition Construction of dairy oligopolies made up of large dairy firms, some of which integrate all upstream and downstream activities Development of corporate capitalism based on the Hanoi and Ho Chi Minh City stock exchanges
Technology and know-how, research and development	Practice of artificial insemination allowing cross-breeding, control of the sanitary environment of livestock farms, know-how and innovations in fodder crops and milk collection and processing	High labour productivity systems based on the mechanisation of most livestock practices and a high level of dairy technology and capital (precision livestock husbandry) Industrialisation of processing
Cultural values and food and social norms	Social issues : milk production as a driver for the development for rural families Health issues : milk = health, growth and modernity	Social issues : appeal of modern technology, of technological gigantism Health issues : industrial milk = symbol of safety, health and modernity

Source Our surveys

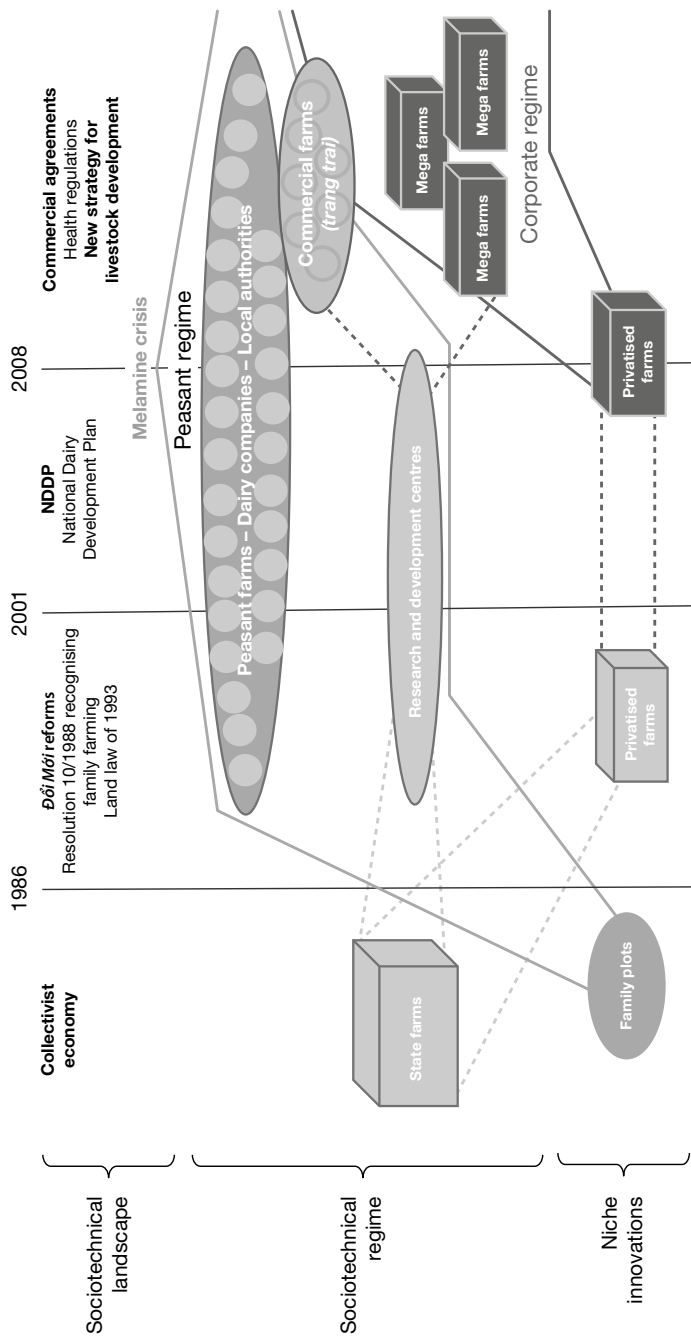


Fig. 2 Sociotechnical trajectory of the Vietnamese dairy sector

2 The Emergence of Mega Farms and the Establishment of a ‘Corporate’ Regime

From 2008 onwards, the Vietnamese dairy sector underwent major changes that resulted in a change in the sociotechnical landscape and the emergence of a new regime. Public policies were directed towards the industrialisation of the dairy sector. The aim was to promote large farms, reduce the trade deficit, promote new health standards and strengthen the sector’s competitiveness to face the challenges of foreign competition.

2.1 Challenges to the ‘Peasant’ Regime

The Vietnamese dairy sector was initially very affected by the melamine contamination crisis. In October 2008, at a time when Vietnam was importing the equivalent of 618,000 tonnes of milk annually, amounting to about 80% of national consumption, the country was forced to deal with imports of adulterated milk powder from China. The presence of melamine in a large number of batches of infant formula in China led to the hospitalisation of tens of thousands of young children, and the death of six babies. Vietnam reacted by halting all imports of Chinese milk, and closing down some local industries using adulterated milk powder. This crisis resulted in a renewed interest by industries in the local production of milk, in a context of a severe erosion of consumer confidence in the dairy industry. A number of these industries then invested in systems for supporting domestic dairy producers and in the establishment of specialised industrial dairy farms.

The melamine crisis occurred at the same time as domestic demand was growing for ‘healthy’ and ‘safe’ products (*thực phẩm sạch*) that met industry standards or were part of guarantee systems. Vietnam increased the number of its trade agreements following its accession to the WTO in 2007. As a result of these developments, the Food Safety Law,³ which was ratified in 2010, gave rise in the ensuing years to several implementation decrees and circulars. This led to the emergence of certification systems in other sectors, like meat or ‘safe’ vegetables. These health safety policies encouraged the industrialisation of the dairy sector, with a greater concentration of production, and an integration of production by the industries themselves.

At the same time, in the livestock sector, a new kind of policy emerged in 2008 to address the need to reduce the country’s dependence on imports. This shift was initiated by the ‘Strategy on animal breeding development up to 2020’ launched in 2008.⁴ This strategy’s primary objective was to create favourable conditions for the emergence of household farms with intensive production and of large industrial

³ Law no. 55/2010/QH12 of 17 June 2010.

⁴ Decision no. 10/2008 of the Prime Minister.

farms. This regulation was followed, in 2014, by a new decision⁵ of the Ministry of Agriculture and Rural Development, which aimed to improve value addition by the livestock sector, while ensuring the principles of sustainable development. This decision confirmed the orientations of the horizon 2020 strategy, but included environmental safeguards. Accordingly, Vietnam adopted a livestock law in 2018⁶ that emphasised the need for cooperation between actors in the livestock sector, and which promoted production areas with stringent health safety requirements and the maintenance of coexistence of different livestock farming models. This explicit inclusion of the term ‘coexistence’ in the law showed the State’s concern at the strong challenge posed to the peasant system by the rapid growth of larger farms.

2.2 The Promotion of ‘Commercial Farms’ and ‘Companies’

The emergence of large individual farms was first encouraged by the certification of family farms as part of the *trang trại* label, which we translate here as ‘commercial farms’. The aim was to define criteria to help local authorities at the district level register larger family farms in order to orient certain aid programmes towards these farms. The criteria for the certification of the *trang trại* farms were first defined in 2000 by a Ministry of Agriculture circular. They were revised upward in 2011 via Circular no. 27 from the same Ministry. The turnover threshold for the livestock sector increased to 1 billion dong. For a dairy farm, this represented a herd of about 25 adult dairy cows each producing 3000 L per year.

There were at total of 33,500 ‘new criteria’ commercial farms in Vietnam in 2016, of which 21,060 were in the livestock sector. Although these commercial farms accounted for a mere 0.35% of the total number of farms in the country, their number had seen an increase by 67% since 2011. According to the 2016 census, this ‘farm economy’ (*kinh tế trang trại*) accounted for 135,500 permanent workers, 44% of whom were from within the family, and 56% were salaried employees. In the same period, between 2006 and 2016, the number of farm households decreased from 10.5 million to 9.3 million (GSO, 2018). In the dairy sector, this change reflected an increase in the number of farms with 20 or more cows.

At the same time, several regulations allowed the establishment of ‘private firms’ (*doanh nghiệp*) in agriculture and agro-industry. Between 2006 and 2016, the number of firms approximately doubled from 2136 to 3846 nationwide (GSO, 2018). In the dairy sector, these companies mainly involved themselves in processing, supply of inputs and marketing of dairy products.

⁵ Decision no. 984/2014 of the Ministry of Agriculture and Rural Development (MARD).

⁶ Law no. 32/2018 on livestock farming passed in the National Assembly.

2.3 The Emergence of the ‘Mega Farm’ Model

However, it was primarily the advent of mega dairy farms that completely transformed the organisation of the dairy sector in Vietnam. Consumer interest in locally sourced milk products (following the melamine crisis), the support of the authorities for this type of project, and the anticipated benefits of an integrated industrial organisation led to the construction of a large number of mega farms. Vinamilk, a private industrial group which had been collecting milk mainly from peasant dairy farms, set up five industrial dairy farms between 2007 and 2014, each with about 1000 milch cows. In 2017, this company opened a 500-head certified organic dairy farm in Dalat. In 2018, it started a new 4000-head mega farm in Thanh Hoa. In 2019, it announced the launch of two new mega farms: one in Tay Ninh (8000 heads) and one outside Vietnam, in Laos (24,000 heads).

At around the same time, the TH Milk company started what would go on to become the largest private mega farm in Vietnam by 2009. By 2014, this farm, located in Nghe An province, already had 44,000 dairy cows. In 2017, the company announced the launch of a new 10,000-head mega farm project in Ha Giang province, followed by another 5000-head project in Phu Yen. In 2019, TH Milk further announced that it was planning a 10,000-head farm in Thanh Hoa and another of 20,000 heads in Soc Trang. We must also mention Future-Milk’s farm of close to 1000 cows, set up in 2008 on the former State farm of Son Dong, and Moc Chau Dairy company’s three industrial farms, set up between 2010 and 2015.

These mega farms constitute a niche innovation that has generated renewed interest in technology and capital intensive systems, to the detriment of the more labour intensive family systems. The mega farms are based on the in-stable rearing of Holstein cows supplied with an automated feeding system consisting of a mix of silage and industrial feed. Forage cultivation practices, feed distribution and milking are mechanised, resulting in a higher labour productivity than in household dairy farming. They are based on the provision by the authorities of large-scale land holdings, most of which were part of erstwhile State farms.

In 2018, mega farms accounted for 32% of the national bovine herd, compared to 25% in 2014, and less than 5% in 2008. The rest is owned by family farms.

This period also saw the rise of international-scale dairy processing industries. Following the privatisation of the erstwhile government-owned dairy Vinamilk in the 2000s, the company became the third largest private company in Vietnam in 2017, accounting for half of the dairy sector’s market share. Also worth noting is the stock market listing of TH Milk (the 166th largest private company in Vietnam in 2018), the purchase of the IDP dairy company by a Japanese investment fund in 2015, and the complete privatisation of the Moc Chau Dairy company in 2018.

2.4 A Period Marked by a ‘Corporate’ Sociotechnical Regime

We choose to describe the sociotechnical regime as ‘corporate’ since it resulted from changes in the Vietnamese sociotechnical landscape, insofar as this new regime aimed to promote productive investments in agro-industry, to the detriment of the complementarity between firms and peasants that had prevailed until then (Table 2).

Today, this reversal of the sociotechnical regime appears to be both a change in the development model and a strategic adaptation of actors to the new sociotechnical landscape. Livestock farmers are taking advantage of market opportunities to grow in size, thanks to credit obtained from firms. Firms decide to invest where the opportunities are most favourable, whether in terms of access to land or of milk collection. And local authorities favour the setting up of industrial systems to create local employment and income for the district,⁷ and to meet the rapidly growing domestic demand for local milk. These strategic decisions lead to the establishment of new collective norms, and to configurations in agri-chains that reflect ‘compromises’ between local actors, industries and local authorities. While these compromises serve as the basis for ‘coexistence’ between different models, their overall balance in terms of competition and access to resources remains very fragile.

3 The Coexistence of Dairy Models: Between Pragmatic Trade-Offs and the Dynamics of Capitalism

The trade-offs made by authorities to orient this coexistence are illustrated in particular by land management and the promotion of local partnerships.

3.1 Land Management, a Prerogative of the State to Orient the Transition

The issue of land has emerged as a central element of the sociotechnical landscape. Since State services are in charge of land matters, they could orient the outcome of the transition in a definite matter. From the early 1990s, the ‘distributions’ to peasant families following the *Đổi Mới* reforms favoured a small peasant farming model. This distribution of resources was particularly equitable, with an average of 0.9 ha available per household. This redistribution, confirmed through the issue of ‘red books’ to peasant families, led to the rise of very land- and labour-intensive diversified farming systems (Khanh et al., 2016).

⁷ The 63 provinces of Vietnam are divided into districts. Each district is further divided into communes.

However, from 2008 onwards, the authorities favoured the consolidation of land to enable the gradual emergence of larger farms that could meet the stated requirements of the livestock farming development strategy. The number of ‘commercial farms’ increased, while the number of farm households decreased. At the same time, local authorities encouraged land deals that favoured the emergence of agro-industrial activities by allocating land that had remained under direct State control. This trend was particularly evident in the dairy sector with the emergence of the numerous mega farms mentioned above. Of course, the vast land holdings of the former State farms played a significant role in this land transition.

3.2 Local Partnerships: A Factor in the Structuring of Milksheds

The importance of local authorities in managing national policy priorities was also reflected in the emergence of local partnerships to support the dynamics of creating milksheds. When mega farm projects were launched in areas where peasant dairy farms already existed, the partnerships between local authorities, private investors and peasants led to compromise situations. The mega farms were presented either as demonstration farms (as in the case of the Ba Vi industrial farm) or as units that provided quality heifers for small livestock farmers. Mega farms also promised to create local jobs, buy fodder maize from neighbouring peasants and sell manure to the farms.

Local authorities acted as ‘guarantors’ of this coexistence to ensure the success of these adjustments and compromises. This was reflected, for example, in the establishment of agreements between the firms and local authorities. In Ba Vi, for example, the IDP company signed an agreement with district authorities in 2012 to support the development of local livestock farms. The local authorities also encouraged the establishment of certification labels or local geographical indications to promote the collection of fresh milk, such as the Moc Chau Milk brand or the Ba Vi Fresh Milk certification. With this in mind, the Ministry of Agriculture put out a circular in 2017 to promote the establishment of private–public partnerships to manage agricultural investments.⁸

3.3 The Limits of the Logic of the Agri-chain

However, the coexistence of different forms of production in the same territory was not always taken for granted. In these local partnerships, the logic of the agri-chain sometimes prevailed over the objectives of seeking complementarity. In 2015, for instance, the milk crisis in the Hanoi region led several firms to limit their milk

⁸ MARD circular no. 14/2017 on ‘partnerships’ within value chains.

collection to the largest livestock farmers to reduce supply costs, a move that forced peasant livestock farmers to diversify their activities. During the milk price crisis in 2016, Cu Chi district, in the south of the country, sought to develop its own certification brand for locally produced milk. The district's identity was, however, not strong enough to support its development.

Sometimes the lack of compromise can even leads to local tensions. This was the case, for example, in 2014 with the TH Milk farm in Nghia Dan, following the pollution of the watercourses of neighbouring villages by the farm's manure slurry. The authorities attempt in such situations to encourage modifications in the firms' strategies towards more sustainable trajectories. In concrete terms, the firms have invested in projects to support local communities, or to offer school scholarship programmes, but such projects have met with varying degrees of success. These experiences show that the dynamics of the evolution of milksheds in Vietnam play out in collaboration between the State, the firms and the peasants. Because of the possibility and variability of local trade-offs, the outcome of the agrarian transition remains uncertain.

4 Conclusion

Our observations of the livestock transition in Vietnam highlight the pluralistic nature of the dimensions of sociotechnical change. The transition appears to be a gradual process in which individual, collective and cognitive dimensions interact to produce differentiated trajectories (de Terssac et al., 2014). Rather than the replacement of certain forms by others, transition leads to parallel trajectories, i.e. the superposition of several regimes whose relative importance varies according to local trade-offs. These developments shed light on the coexistence of different forms of production in the same territory. Indeed, this coexistence appears to be the product of political orientations, and therefore of power relations, while at the same time being part of market dynamics driven by demand, techniques, investments and cognitive models. Finally, trade-offs by public authorities, which reinforce or weaken coexistence, turn out to be 'pragmatic', insofar as they respond to adjustments in the face of socio-economic contexts that are undergoing profound change.

The coexistence of peasant farms with industrial farms illustrates these pragmatic adjustments. For the mega farms, it is a matter of increasing their purchases of fodder maize from neighbouring farms, or of emphasising the impact of reselling good quality heifers to small livestock farmers. For industrial dairies, it is a matter of highlighting their role of collecting milk from peasant livestock farmers. More generally, private dairy farms clearly understand the need to follow 'inclusive' trajectories with respect to household farms (MARD, 2019).

Our approach allows us to better identify the temporal dynamics of innovations. In particular, the Vietnamese case turns the classical perspective of the conception of the agroecological transition on its head. The intensive and productivist model described as 'conventional' in Europe is considered in Vietnam as a form to be promoted, an

outcome expected from the transition. The new regime is also based on a social construction of new food models concerned with ‘health security’ which leave little room for the incorporation of environmental issues and local specificities. As a result, the mobilisation of the concept of the agroecological transition is likely to run up against the local context. Further studies are needed to better qualify the sustainable forms of agricultural production that meet the challenges of emerging Vietnam. Research on farm trajectories, ‘medium-sized’ farms and ‘commercial farms’ could help identify agroecological solutions that are locally relevant. Similarly, it will be of interest to examine the trajectories of a return to more integrated forms of agricultural production.

Finally, it seems essential to link the coexistence approach to a more in-depth analysis of the dynamics of agricultural capital and of land. Indeed, the emergence of mega farms may seem to constitute a return to concentrated forms of production that are very similar to the State farms that were set up during the collectivist economy era. But what is different this time is the increasing importance of financial capital in the transformation of these economies. As De Koninck (2010) notes about the agrarian transition, we are witnessing a ‘shift from a society characterised by accumulation in agriculture to one in which accumulation takes place in industry.’ Such research, focusing on the dynamics of ‘agrarian capitalism’ in Vietnam, could lead to a better understanding of the social issues of coexistence. The aim would be to shed light on the social impact of the transition and to analyse the evolution of rural workers’ livelihoods.

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