



Emergency **M**arket **M**apping & **A**nalysis (EMMA) report

The pig and chicken market
Lệ Thủy District, Quảng Bình province, Viet Nam

11-14th December 2010



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Executive summary

Torrential rains from September 30th to October 7th caused record high flooding in a number of provinces in central Viet Nam, with an average rainfall of 300 to 800mm. Quảng Bình province was among the most severely hit with rainfall recorded at 1,600mm, reaching a 20 year high. From the 14th further heavy rainfall in the area (800 to 1100mm) caused more flooding in more than 80 villages in Quảng Bình. Over 357 houses were damaged or completely destroyed. Up to October 21st, there were 53,520 houses flooded.

Lệ Thủy district was one of the districts most affected with over 35,600 households or 141,500 people affected, meaning almost the entire district. Household livelihood capacity and local livelihood systems were severely affected: rice and rice seed stocks washed away, farm implements lost, and livestock drowned.

This EMMA report summarizes the impact of the 2010 floods on two critical livestock market systems; pigs and chicken, and its impact on the most vulnerable target groups identified as being: small-scale (female) farmers involved in pig or chicken raising.

The market assessments main findings and response recommendations are:

- Both markets were partially affected and mainly at the commune or district level, impacting on farmers and medium to large-scale producers.
- Livestock loss due to the floods or flood-induced diseases was 30 to 40% for both markets. There are indications of significant underreporting of livestock loss in the official damage data. The reasons for underreporting are likely capacity of commune and district government staff to estimate livestock loss, priority of other sectors in damage and loss reporting, complex nature of provision of livestock support, etc.
- The floods significantly impacted on the prices of livestock: prices on the pig market went up 67 to 80% while prices on the chicken market 30 to 40%. Costs for pig fodder increased 30% while costs for chicken fodder remained at the same level, inflation increases included.
- VET costs and the availability of VET services were not impacted by the floods due to Government subsidies and price control.
- It is unclear what the Government plans to re-stock both markets or provide other (subsidized) support. Government support for the livestock market will likely be provided at the beginning of next financial year, January 2011. Until then, affected farmers have to cope with their loss through other mechanisms.
- At the time of the floods a lot of men were doing additional off-farm work while the women were taking care of the family and livestock and carried out other responsibilities. The combination of the suddenness of the floods and the men being away from home resulted in a significant increase of pressure and stress onto women in the first weeks of the floods.
- It is unclear how the floods impacted on labor costs, transport costs, credit availability, damage to animal housing and in the case of the chicken market, VET services availability and costs.

Response recommendations or a combination of:

- Phased piglet/chicken provision to (female) farmers, including vaccination also for existing livestock, noting the farmers' preference for chicken instead of pigs as investment and maintenance costs for pigs are higher
- Cash grant to (female) farmers, as cash is the main preference of farmers
- Cash voucher to affected (female) farmers to buy piglets/chicken from medium-scale farmers, benefiting farmers as well as medium-scale farmers
- Micro-credit or loans to medium-scale farmers, in combination with other farmer targeting response option

Emergency context

Flood situation

Torrential rains from September 30th to October 7th caused record high flooding in a number of provinces in central Viet Nam, with an average rainfall of 300 to 800mm. Nghe An, Ha Tinh, Quang Binh, Quang Tri, and Thua Thien Hue provinces were heavily affected. In particular, Quang Binh province was among the most severely hit with rainfall recorded at 1,600mm, reaching a 20 year high. Water was released from a number of reservoirs in the region, further exacerbating the negative impacts of the flood in Tuyen Hoa, Bo Trach, Quang Trach, Minh Hoa, Le Thuy, and Quang Ninh districts of Quang Binh province.

From the 14th further heavy rainfall in the area (800 to 1100mm) caused more flooding in provinces from Nghe An to Ha Tinh. Amongst them, Quang Binh was affected by an average rainfall of 513 to 936mm, causing additional flooding in more than 80 villages.

As of October 26th, the death toll throughout central Viet Nam reached 143. An additional 11 are still missing. In Quang Binh, over 357 houses are damaged or completely destroyed. Up to October 21st, there were 266,659 houses flooded of which 53,520 were in Quang Binh. (Source: CCFSC).

Flood impact

According to the preliminary results of the inter-agency joint assessment¹, the impact on the lives of local people is extensive. Families lost their food stocks and expect to face food shortages until next year, should there be insufficient support. Hundreds of families lost their homes and thousands more are currently living in damaged houses, many of which remained under flood water for some days. Household livelihood capacity and local livelihood systems were severely affected: rice fields submerged, rice seed stocks washed away, farm implements lost, livestock drowned. Due to the floods, access to clean water was also initially limited. Schools were damaged, and school books and materials were destroyed. Many parts of the National Highways 15 and Ho Chi Minh Highway in Quang Binh were submerged at times under 0.5-2m water.

Emergency response

In the immediate aftermath of the floods, the Government has taken necessary measures to deal with the floods through supplying food and cash for the flood affected people. Mass Organizations and a large number of INGOs and private donors have also provided relief support.

Besides the cash and food support from the Government, affected people in Quang Binh have mainly been supported with food, hygiene kits, water and sanitation supplies, school supplies and household and education kits (Source: CCFSC relief support matrix)². Several NGOs like Save the Children and Plan International are currently developing early and long-term recovery programs focused on agriculture and education.

Relief support provided to Le Thuy district (total value: 16,8 billion VND or 861,539 USD)

- Cash: 5,2 billion VND (around 267,000 USD)
- Rice: 640 ton (from Government source: 580 ton)
- Package with food and other utilities: 7,228 sets (value 5 billion VND)
- Clothes and blankets

¹ Joint assessments were conducted jointly in the second week of October 2010 by a number of UN agencies and INGOs, including Oxfam. <http://www.cfsc.org.vn/showpublication.aspx?pcdid=349>

² <http://www.cfsc.org.vn/showpublication.aspx?pcdid=356>

EMMA methodology

The EMMA is a rapid market analysis designed to be used in the short term aftermath of a sudden-onset crisis. Its rationale is that a better understanding of the most critical markets in an emergency situation enables decision makers (i.e. donors, NGOs, government, other humanitarian actors) to consider a broader range of responses. It is intended to be neither statistically significant nor to replace existing emergency assessments, or more thorough household and economic analyses such as the Emergency Food Security and Livelihood assessments (EFSL), any sector specific in-depth assessments or full market assessments, but instead should add to the body of knowledge in the post-crisis period by providing timely information about the structure and functioning of key markets in the short term so that immediate programming can be based on comprehensive market information.

The EMMA team in Viet Nam was made up of five members from UN, NGO and Government agencies, with technical and administrative support from UNDP and Oxfam main offices in Ha Noi. All EMMA participants have received comprehensive seven day training in August 2010;

- Pham Phuong Mai (Oxfam Québec)
- Nguyen Quang Dong (Oxfam GB)
- Nguyen Dang Nhat (Oxfam Hong Kong)
- Dao Van Minh (Ministry of Agriculture and Rural Development – Disaster Management Center)
- Miguel Coulier (UNDP)

After preliminary background research, the EMMA on the ground was carried out over a period of four days and focused on one of the most affected districts in a province impacted by two consecutive floods. The team collected additional secondary information from a wide range of resources and carried out interviews with key informants (see annex 2 for a list of interviewees).

Although the EMMA was carried out successfully, the following limitations were identified:

- The number of days for the actual assessment was limited resulting in some aspects of the market chain not fully investigated in detail
- Due to various reasons, the survey location was limited to two communes and one district. However, the communes and district are representative for the wider area so the results of the EMMA are valid for other districts in the province.
- The EMMA was carried out six weeks after the disaster. Strong and entrenched disaster risk reduction practices in the selected assessment area resulted in quick recovery behavior for the majority of farmers in the first weeks after the disaster. Still, needs were identified in the sectors traditionally not supported under disaster response and recovery activities

Assessment area: Lệ Thủy district, Quảng Bình province



Lệ Thủy, the most southern district of Quảng Bình province, is 141,052 km² in area size and has 28 communes. It has a total population of 147,000 with a population density of 99 people per km². The population is very diversified with a high percentage of ethnic minorities of which the Van Kieu are the largest. The current poverty rate in the district is 23% and 5 communes are still considered as 'extremely poor'.

The district's economy is largely based on livestock breeding and agriculture (rice, corn, sweet potatoes-

750ha, cassava-700ha, peanut-600ha, sesame-110ha and vegetable-1,290ha), fishery and forestry. Rice is the largest cultivated crop (98%) with Lệ Thủy district having one of the highest rice yields in the province. Rice is mainly planted and harvested in the winter-spring season (9,500ha) and in the summer season (4,000ha). Ratoon rice is planted and harvested in May-June (5,869ha). The district doesn't have any winter crop. 45% of the total agriculture production in the district is from small- and medium-scale livestock breeding (pigs, poultry and cows) with the majority of farmers involved.

35,600 households or 141,500 people, meaning almost the entire district, were affected by the floods. 27,500 houses were submerged from 1 up to 2m with 515 houses damaged and 46 completely destroyed, the latter affecting 1,872 people. 400 tons of rice seed was lost and large areas of other crops flooded. Livestock was also seriously affected with 3,447 pigs and 141,846 chickens killed. For further detailed information see annex 1 for the Lệ Thủy district damage table.

Target population

- The selected target population for the EMMA was the population most seriously affected by two consecutive floods in October 2010. Besides Minh Hoa, Bo Trach and Quang Trach district, Lệ Thủy was one of the most affected districts in Quảng Bình province.
- The assessment focused more specifically on the rural population as the livelihood of the majority of the people in the province is agriculture based (cash crops, food crops, livestock breeding, etc.).
- Small-scale farmers were targeted as the number of people involved in large-scale or industrial crop and animal farming is very limited. However, the latter ones have been included in the EMMA for more in-depth and precise analysis of the market chain.
- There was a specific focus on women as they are the most involved in crop planting and harvesting and livestock breeding. Together with other domestic, social and economic roles and responsibilities, this makes this particular group extra vulnerable.

Seasonal calendar

Table 1 shows the seasonal calendar for Lệ Thủy district containing seasonal information on the rainfall and hazard pattern, main crops, off-farm work and public and school holidays. Information is missing on cassava and maize as major crops used for livestock crop-based fodder.

Table 1 – seasonal calendar

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Rainy season												
Cyclone/flood season												
Rice	Winter-spring					Summer						
Ratoon rice												
Sweet potatoes												
Off-farm work (man)												
School holidays												
Holidays		<i>Tet</i>							<i>Indp. day</i>			

Critical markets

- The EMMA team focused on the agriculture sector as it is the major contributor to the local economy in the area. Fishermen, located near the coast, are only a small group and they have not been significantly affected by the floods compared to the majority of the affected farmers who live more inland. There are no specific shelter needs in the district as most of the houses were flood resistant or repairs have already been carried out.
- Six weeks after the flooding, there are no specific emergency food needs to be addressed anymore, except in some ethnic minority areas in the North of the province. Rice, noodles and other food have been adequately supplied by the Government complemented by a number of NGOs. Also, the rice from the previous summer season was already harvested in September, before the floods, as seen in the seasonal calendar. Only stocks of rice and rice seeds were seriously affected rather than not yet harvested rice.
- Based on criteria like portion of farmers' livelihood, contribution to local economy, actual needs, coping capacity and existing and planned recovery support from Government, NGOs and others, the EMMA team drew up a list of possible critical markets related to agriculture; from agricultural input to livestock, farm products and supporting services. After further discussion and based on additional information, rice seeds and vegetable seeds were selected as the two critical markets. However, the team found out that the rice seed supply for the winter-spring season has so far and will in the near future be fully recovered through subsidized Government support. The amount of other crop seeds like peanuts, corn and others needed was very limited and has already been covered through the Government disaster response fund, individual initiatives or family/community support.
- Taking into account the amount of farmers involved in livestock breeding, the 45% contribution to the agriculture production in the district, and the significant number of livestock lost, the team chose to analyze the livestock market, more specifically the pig and chicken market.

The main analytical questions for the two markets are:

- *How has the pig/chicken market been affected by the double flooding?*
- *What are the best and most feasible response options to support the (female) farmer in the short and longer term?*

Pig market system

Key findings – Gap analysis

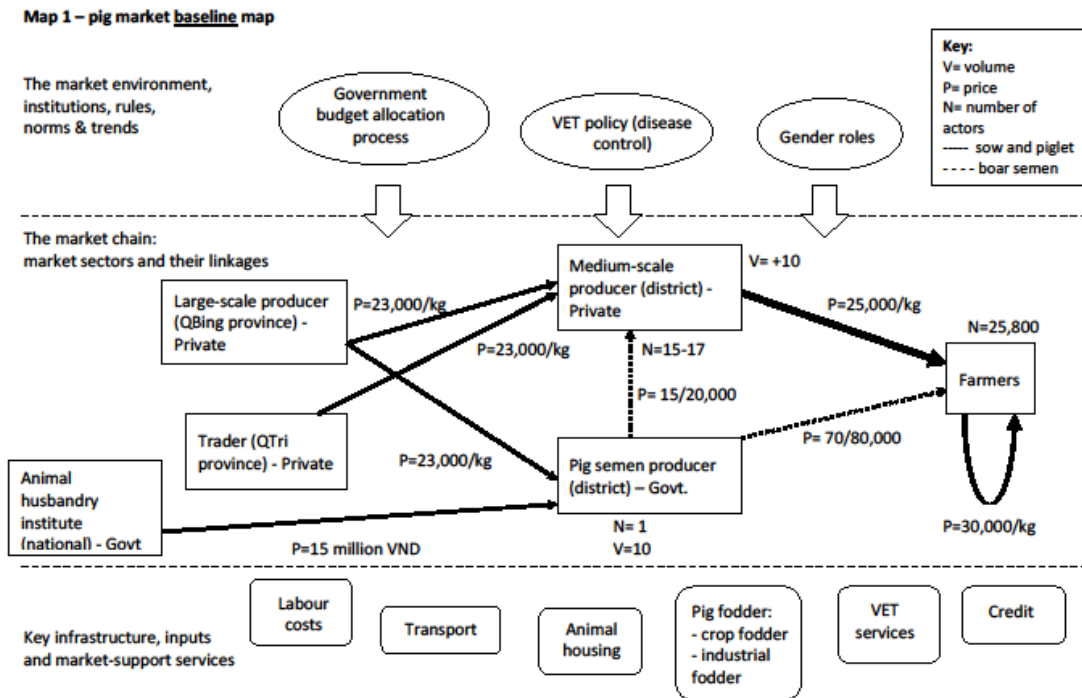
Table 2 below does an effort to quantify the total need of pigs from households raising pigs and the timeframe for that need to be met. Out of the total of 25,800 farmers involved in pig breeding, six weeks after the floods around 18,000 of them have not yet recovered and are still in need of support. It was estimated that on average 30% of their livestock has been lost, the majority of which has not yet been fully replaced. It will take six to twelve months in order for the farmer to have their total livestock being restored. So far, farmers in Lê Thủy have been supported with VET kits and animal shelter materials since the end of November. This support will continue until the end of January 2011. When asked for their preference for support, households opted for cash support.

Table 2 – gap analysis pig market

Target group	Hh in need	Household shortfall	Other aid	Total gap	Likely gap duration	Preference for help
Households raising pigs	18,000	30%	VET kits and animal shelter (WSPA)	22,000	6 to 12 months	Cash, piglet

Key findings – The market system before the floods

Map 1 shows the situation of the pig market before the floods. The map shows the market chain with the main actors and other elements like the market environment, institutions, norms and trends and key infrastructure and input that is essential in the analysis of the market.



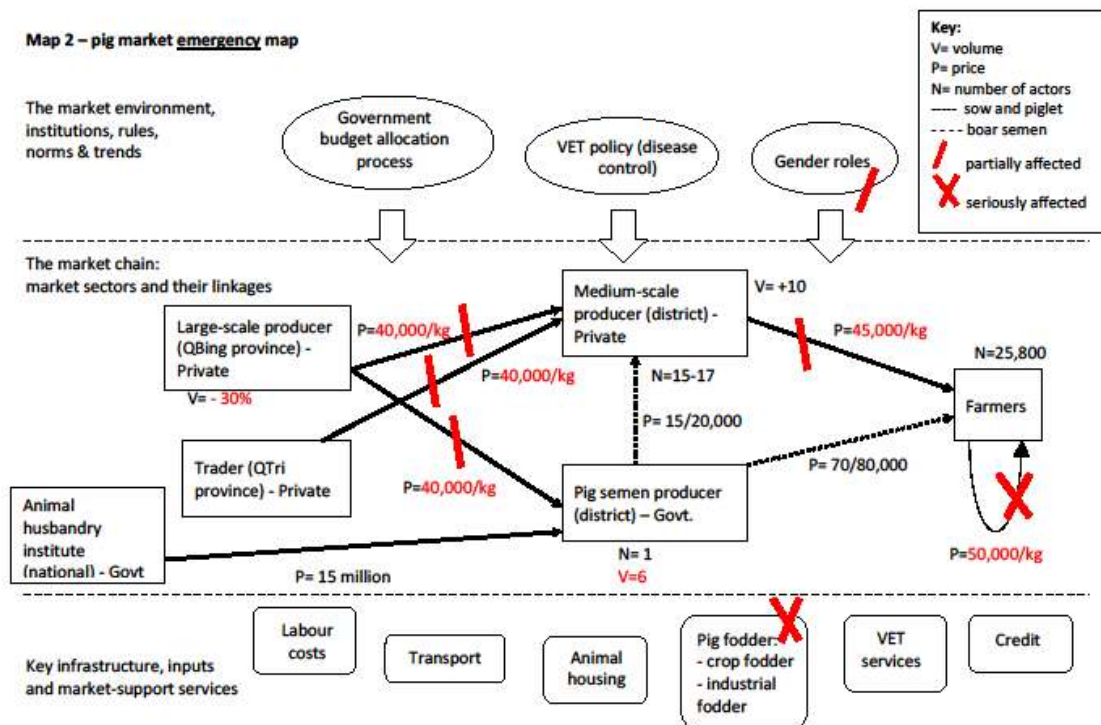
In the pre-flood situation, the pig market worked as follows:

- There are a total of 66,000 pigs in the whole district; 45,000 of them are produced locally and 21,000 are purchased from Dong Hoi City or neighboring provinces like Quang Tri, through **local traders**.
- 20% or 13,200 of all the pigs in the district are sows, with 500 hybrids and the rest local breeds.
- 10 boars in the district are housed by a Government institution for pig semen production. Semen doses are sold by the Government **pig semen producer** to the medium-scale producers and the farmers. For reasons of quality and disease control, the boars are purchased from the **National Animal Husbandry Institute** in Hanoi for 15 million VND per boar.
- There are 15 to 17 **medium-scale producers** in the district, each having a minimum of 10 sows.
- The pig semen producer and the medium-scale producer buy the pigs from a **large-scale producer** in the province or local traders from neighboring provinces.
- The **farmer**, at commune level, is involved in small-scale production of sows and piglets for own consumption and sale to other farmers. More than 25,800 farmers are involved in pig breeding with one farmer having an average of 1 to 3 sows.
- The pig production and trade is the highest in the spring-summer time. As part of their flood coping and loss prevention strategy, farmers prefer to decrease the production of pigs during the months July till November.
- Women are the one in the household in most cases responsible for raising, taking care, buying and selling pigs. Men assist with building the housing and occasionally with the buying and selling of the pigs and preparation of the fodder.
- Pig fodder is mainly comprised of crop based fodder from cassava, sweet potato and maize, and additional industrial nutrient enhanced fodder.

- The price per kilo pig varies from 23,000 VND when purchased from the large-scale producer or trader to 25,000 when purchased from the medium-scale trader. Farmers sell their pigs to other farmers for a higher average price of 30,000 per kilo, meaning a profit margin of 5,000 per kg.

Key findings – The market system after the floods

Map 2 shows the situation of the pig market after the floods, indicating where parts of the market chain, actors, market environment and supporting systems have been partially or significantly affected:



- As stated by the affected farmers and medium-scale producers, an average of 30% pigs died due to the floods or flood-induced diseases in the immediate aftermath of the floods. The majority of the loss is situated at the end of the market chain, with the farmers. A lot of the pigs died due to a combination of suddenness of floods and non-flood proofing of animal housing.
- There are indications of significant underreporting of livestock loss in the official damage data. The reasons for underreporting are likely capacity of commune and district government staff to estimate livestock loss, priority of other sectors in damage and loss reporting, complex nature of provision of livestock support, etc.
- The Government pig semen producer reported the loss of four boars. Due to the Government financial planning and budget allocation process, these boars will only be replaced at the beginning of 2011.
- The price per kilo has significantly increased in all parts of the market chain: a 74% increase (17,000 VND per kg) between the large-scale producer and the medium-scale producer and the local trader and the medium-scale producer; a 80% increase (20,000 VND per kg) when the farmer buys from the medium-scale producer; and a 67% increase (20,000 VND per kg) when the farmer sells to other farmers.
- The profit margin, excluding additional costs, has remained the same for the farmer, but has slightly increased for the medium-scale farmer (from 2,000 VND per kg to 5,000). Besides

reasons like lower supply due to floods and the usual inflation, other reasons for price increases, e.g. increased animal housing costs, labor or transport costs could not be determined.

- Industrial fodder prices have on average increased by 30%, from 150,000 VND per pack to 210,000 VND per pack
- Vegetables like cassava, sweet potato and maize used for crop fodder has on average been damaged from 32 to 39%. It could not be ascertained if this has led to a crop fodder price increase or not.
- The availability and cost of VET services has not been affected by the floods.
- At the time of the floods men were doing additional off-farm work while the women were taking care of the family and livestock and carried out other responsibilities. The combination of the suddenness of the floods and the men being away from home resulted in a significant increase of pressure and stress onto women in the first weeks of the floods.
- More information can be collected on: the effect of the floods on labor and transport costs, exact numbers of loss per market actor, the availability of credit and the amount of credit before and after the floods, specific livestock coping mechanisms of the individual farmer, the damage to animal housing, etc.

Chicken market system

Key findings – Gap analysis

Table 3 below does an effort to quantify the total need of chicken from households raising chicken and the timeframe for that need to be met. Six weeks after the floods, 8,600 out of a total of 25,900 farmers involved in chicken raising are still in need of support. On average, 30 to 40% of the total number of chickens per household was lost, meaning from 5 to 8 chickens per farmer. Some of the farmers were already able to buy new chickens, but others weren't. Currently, the gap is estimated at around 150,000 chickens. The timeframe for farmers to restock their livestock without any external support is six to nine months. Farmers have a slight preference for chicken support rather than pigs as investment and maintenance costs for pigs is considered higher than for chicken.

Table 3 - gap analysis chicken market

Target group	Hh in need	Household shortfall	Other aid	Total gap	Likely gap duration	Preference for help
Farmers raising chicken	8,600	30-40%	VET kits and animal shelter (WSPA)	20% or around 150,000	6-9 months	Preference for poultry instead of pigs as investment and maintenance costs for pigs are higher

Key findings – The market system before the floods

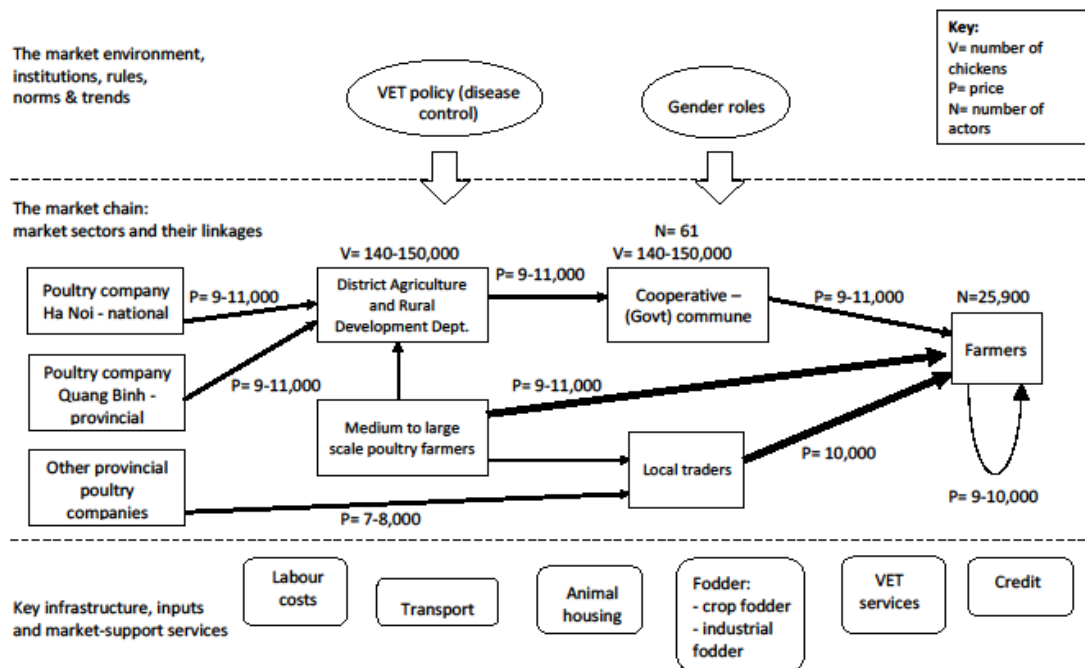
Map 3 shows the situation of the chicken market before the floods. The map shows the market chain with the main actors and other elements like the market environment, institutions, norms and trends and key infrastructure and input that is essential in the analysis of the market.

In the pre-flood situation, the chicken market worked as follows:

- The total number of chickens in Lê Thủy district is 768,726. 80% of all farmers in the district or 25,900 farmers are involved in chicken raising.
- **Farmers** can buy their chicken via three channels: the Government subsidized system, private actors like local traders and medium to large-scale poultry farmers, and from other farmers. The Government subsidized system is irregular meaning not all farmers buy via this way and chickens cannot be bought throughout the year.
- Farmers have an average of 15 to 20 chickens.

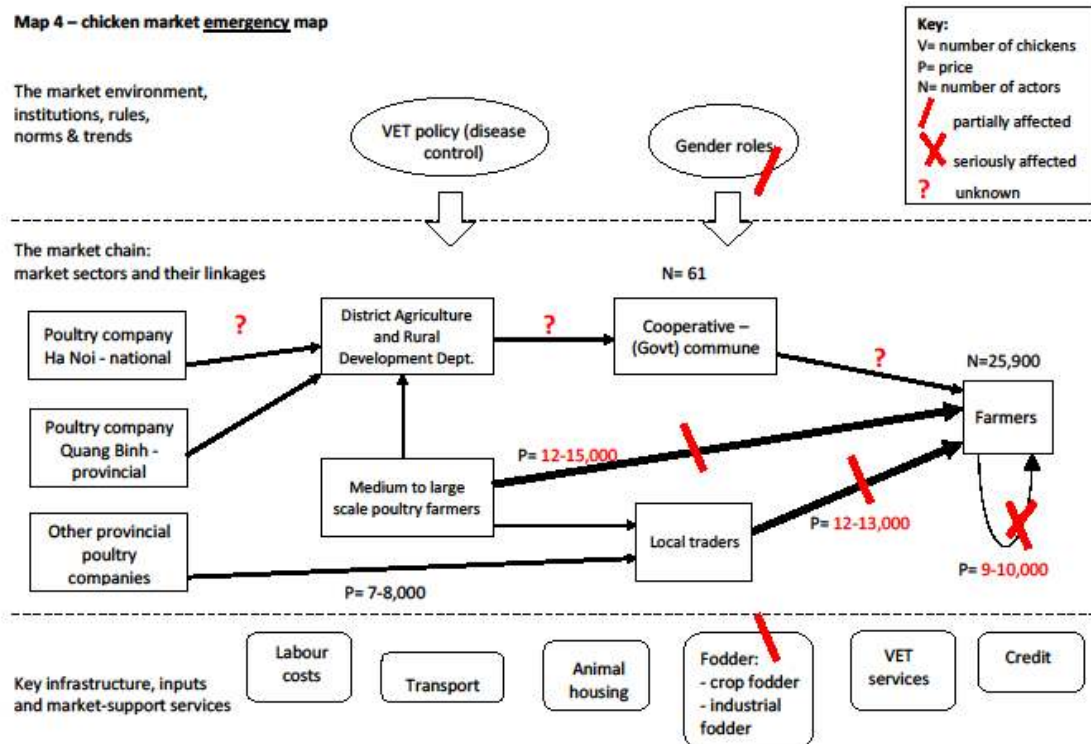
- Around 140 to 150,000 chickens or 19.5% of the total in the district are purchased through a Government supported system, with the **District Department of Agriculture and Rural Development (DARD)** buying chicken from **poultry companies** or institutes in Ha Noi or the province, and selling them to **cooperatives** at commune level. This system is mainly a non-profit distribution mechanism rather than a for-profit production system, explaining the number of chickens remaining the same at different levels.
- There are 61 cooperatives in the district, operated based on Government regulations. All these cooperatives provide services in terms of tractors, ploughs and other material for rent, and sale of pesticides and fertilizers.
- **Medium to large-scale poultry farmers** produce their own chickens and sell them to the local traders, directly to the farmers – the majority of their sales - or to the DARD. The **local traders** in turn sell them to the farmers. It could not be determined how many of both actors were present in Lê Thủy district.
- DARD provides VET support services to the medium to large-scale poultry farmers. It could not be ascertained at which price or if this was subsidized.
- The average price, but more important the quality of the chickens bought via the government chain of the market is higher and more guaranteed than on the private market. However, the price difference is very small and can at certain times also be lower than on the private market.
- The price on the private market, not between farmers, is on average lower due to the fact that farmers have to pay in cash immediately. If farmers sell chickens to other farmers, the price tends to be slightly higher because the farmers only have to pay after they sold the produce themselves, usually around three months later.
- The lowest price is between other provincial poultry farmers and the local traders (7 to 8,000 VND per chicken). The local trader then sells it to the farmer for 10,000 VND per chicken, making the highest profit margin, excluding additional costs, in the whole market chain.
- Similar to the pig market, care of chickens as well as the purchase and selling is largely done by women. Men only assist with housing and occasionally with buying and selling and preparation of the fodder.

Map 3 – chicken market baseline map



Key findings – The market system after the floods

Map 4 shows the situation of the chicken market after the floods, indicating where parts of the market chain, actors, market environment and supporting systems have been partially or significantly affected:



- According to official damage data, more than 141,846 poultry (including ducks) were killed because of the floods or flood-induced diseases. However, similar as with the pig reporting, there is likely to be serious underreporting due to reasons stated above. During interviews farmers stated an average loss of 25 to 30% meaning around 230,000 to 300,000.
- Plans to distribute chickens through the Government subsidized system are not clear yet. The Government is still assessing the situation and developing appropriate interventions to re-stock the market.
- The trade between medium to large-scale farmers and the farmers, between the local traders and the farmers and among the farmers themselves have all been partially affected by the floods.
- Prices increased by an average of 30 to 40% due to the floods as well as the normal inflation. However, the price a farmer gets from another farmer has not increased, meaning the purchasing power of the individual farmer has decreased.
- The profit margin, excluding additional costs, for the local trader has increased by 66 to 150% (from 2-3,000 to 5,000 per chicken) when selling to the farmer, meaning the local trader has 'benefited' from the flood situation. This excludes additional costs like transport costs or other input costs that might have increased due to the floods. This latter could not be determined in detail.
- Prices of chicken fodder, crop based as well as industrial, did only increase by 5-10%, and this likely due to inflation and not the floods.
- Similar to the pig market, women were more affected than men as the latter were doing off-farm work while the women were taking care of the family and livestock and carried out other

responsibilities when the floods happened. The combination of the suddenness of the floods and the men being away from home resulted in a significant increase of pressure and stress onto women in the first weeks of the floods.

- More information can be collected on: the exact loss per market actor, the impact of the flood on labor and transport costs, how medium to large-scale poultry farmers were affected, price fluctuations per market interaction, specific livestock coping mechanisms of the individual farmer, the availability and quality of VET services before and after the floods, issue of credit especially after the floods, damage to animal housing, etc.

Main recommendations and conclusions

Response logic

As both pig and chicken market worked well before the emergency and were only partially disrupted after the floods, especially at the local level, district and commune, the responses will focus on the farmers and the medium-scale producers:

- Support the capacity of the farmers to purchase livestock, fodder, and other support services in order to cope with temporary price increases and temporary low supply of Government subsidized livestock
- Particular focus on women farmers as they are the main actors at lower levels and their vulnerabilities have significantly increased due to the floods
- Support the medium-scale farmer/producer's capacity to purchase and sell livestock at pre-flood market prices, including normal inflation increases

Response options

The following responses were considered and analyzed on feasibility, advantages and disadvantages:

Response options	Feasibility	Advantages	Disadvantages	Timing
1. Piglet/chicken provision to (female) farmers	High	Can be carried out immediately; in combination with vaccination, also for existing livestock. Will promote local breed. Creates quick income/jobs for local farmers. Preferred by Govt. and farmers.	High cost. Need for strict quality control. Additional costs for VET services and possible training. Strong cooperation with Govt. required.	3 months (provision) to 9 months (incl. training, etc.)
2. Cash voucher to affected (female) farmers to buy piglets/chicken from medium-scale farmers	Medium	Implementation less time-consuming. Will benefit medium-scale farmer as well as local farmer. Possible decrease of price.	Need for strict quality control. Not preferred by Govt. Still costs for fodder, housing repair, VET and other services. Agreement needed from Govt. and all medium-scale farmers. Sufficient supply need to be guaranteed.	3-6 months
3. Cash grant to (female) farmers	High	People can choose themselves what to buy. Quick implementation. Preference of farmers.	Cash spent on other goods (usage difficult to monitor). Medium-scale farmers do not benefit. Inflation. Female farmers do not benefit due to money spend by men.	3-6 months

4. Micro-credit or loans to medium-scale farmers	Medium	Contributes to long-term recovery. Short term cash injection. Possible decrease of prices. Good 'proven' tool for poverty reduction and women empowerment (if implement through Women' Union network.)	Loan repayment challenges. Interference with existing credit options. Unknown NGO experience with micro-credit in Quang Binh. Requires strong institutional set-up or time needed for capacity building if institutions not yet in place.	6 months to 1 year
5. Crop support (sweet potatoes, cassava, banana, etc.) for promotion and increase of crop fodder	Low	Sustainability. Saves costs by using local crops. Farmers already using crop based fodder.	Requires sufficient time for piloting and replication. Non-market based intervention. Does not meet short-term needs.	1 year
6. Advocacy and support for flood-proof animal housing	Low	Sustainability. Building back better leads to better preparedness for next storm and flood season, in accordance with international LEGS standards. Addresses neglected sector in disaster response in Vietnam.	Time consuming. Non-market based intervention. Does not meet short-term needs.	1 year
7. Training VET agencies and farmers	Low	Strengthens capacity of VET services at commune level. Sustainability, better preparedness for next storm and flood season.	Time consuming. Non-market based intervention. Does not meet short-term needs.	6 month

Response recommendations

Based on the response logic and a number of response options, the following response recommendations are suggested for market-based interventions in the pig and chicken market in Lệ Thủy district:

Response activities	Key risks and assumptions	Timing issues	Likely effect on market system and target groups	Indicators
<i>Phased piglet/chicken provision to (female) farmers, including vaccination</i>	Provision disrupts usual farmer coping mechanisms or planned Govt. provision. New type of disease/ epidemic occurs after flood. Overloading of existing vaccination services or stocks. Risk of farmers not buying enough livestock from medium-scale producers anymore.	3 – 9 months – phased implementation	Decrease of price of piglet/chicken in local market. Restore production of affected farmers. Increase farmers' purchasing power. Reduce risks of animal diseases/ epidemic. Increase role of women in household.	# piglet/poultry provided to affected (female) farmers # vaccinated piglet/chickens
	Use of local breed. Quality of breed in accordance with Govt. regulations.			

	Cooperation with DARD (if required).			
<i>Cash grant to (female) farmers</i>	Cash spent on other goods. Redistribution of cash among male household members or other community members. Inflation.	3-6 months	Purchasing power of (female) farmers quickly increased. Stabilization of livestock prices at commune level. Demand for livestock from medium-scale producers increased.	# of (female) farmers supported with cash grants
	Farmers prefer cash grant. NGOs have experience in providing cash grants. Goods preferred by farmers available on the market.			
<i>Cash voucher to affected (female) farmers to buy piglets/chicken from medium-scale farmers</i>	Local traders disadvantaged. Govt. does not prefer usage of voucher system.	3-6 months	Farmers as well as medium-scale producers benefit. Reestablishing this part of the market chain.	# of vouchers provided # of (female) farmers receiving vouchers # of livestock bought at medium-scale farmers with vouchers
	Medium-scale farmers willing to accept voucher system and all of them included in the voucher system. Farmers preferring vouchers. Govt. agreement on use of vouchers. NGO have experience in providing vouchers.			
<i>Micro-credit or loans to medium-scale farmers</i>	Loan repayment issues. Disruption of current credit options or overburdening farmers by additional loan.	6 months to 1 year	Cash base of medium-scale farmers can lead to lower prices and higher supply of livestock	# of medium-scale farmers receiving loans
	Farmers preferring loans. NGO have experience in providing micro-credit or loans.			

Since the EMMA is based on a quick market analysis, further analysis is recommended to complete and refine the results of the present study. It is recommended to further analyze:

- **Credit-mechanisms:** explore in detail which credit options are available for the farmer but also the medium-scale producer, the local trader and other market actors, see how the floods impacted the demand for and the availability of credit, see if we could make use of the existing credit mechanisms, and analyze how the different response options will impact on the credit 'market'.
- **Coping strategies** of different market actors, but specifically the (female) farmer: explore the traditional coping strategies and see how the different response options can complement this or strengthen it. Also, further information is needed on how the Government plans for livestock support are part of the coping strategies of the farmer or not.
- **Household income and expenditure**, before, during and after emergencies, particularly the share of livestock production, livestock consumption, agricultural income and other livelihoods but also remittances, off-farm work income, loans, health and education expenses and possible social benefits.

- **Plans to re-stock the market** at different levels: gain more detailed knowledge how in previous emergency situations the livestock market was re-stocked and what the current plans are, and if so, which market actors are responsible for it and what is their share in the re-stocking. Also, the impact of Government subsidized re-stocking should be analyzed.

Annexes

Annex 1 - Le Thuy district damage table – as of 29th of October 2010 (source: District People's Committee)

Number of death	4
- Children	1
- Women	2
Number of injured	16
- Women	5
Number of households affected	35,600
Number of people affected	141,500
Area polluted	141,486ha
Number of people lack of potable water	125,000
Number of houses destroyed	46
- Permanent or semi-permanent	4
- Temporary	42
Number of houses damaged	515
- Permanent or semi-permanent	280
- Temporary	235
Number of houses flooded	27,500
- Above 2m	16,500
Number of households with houses damaged	27,500
Number of people with houses destroyed	1,872
Number of schools affected	78
Number of classrooms partially damaged	200
Number of classrooms flooded	2,200
Number of hospitals and clinics affected	29
Area of rice paddies flooded	None
Area of sweet potatoes damaged	260ha
Area of cassava damaged	221ha
Area of vegetables damaged	501ha
Area of rubber trees damaged	102ha
Rice seed damaged	400ton
Number of buffaloes killed	5
Number of cows killed	27
Number of pigs killed	3,447
Number of poultry killed	141,846
Number of agriculture machines damaged	154
Number of water pumps damaged	974
Area of aquaculture damaged	374ha
Volume of fish lost	200ton
Number of boats damaged	7
National highways flooded	11km
Area of sub-national roads flooded	106km

Annex 2 - List of interviewees

1. Mr. Nguyen Van Xuan – Director Le Thuy Red Cross
2. Mr. Nguyen – Coordinator Plan International Quang Binh
3. Mr. Pham Huu Thao – Vice-chairman Le Thuy district People’s Committee, head of Flood and Storm Control Committee
4. Mr. Le Quang Tan – Vice-director of District Agriculture and Rural Development department
5. Mr. Duong De Quang – Head of district dept. Agriculture and Natural Resources
6. Mr. Hau – Staff district seed and seedling section
7. Mr. Quang – Staff district pig reproduction section
8. Mrs. Tinh – middleman Kien Giang market
9. Mrs. Gai – poultry collector/ local trader
10. Farmers Loc Thuy commune