



Diagnostic and technical report of hatchery in Attapeu



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Picture covert: Hatchery of Naphoc (copyright: Quynh Do Huu, 25 January 2013)

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1 Diagnostic analysis

The Annadya project has identified four fingerling producers in Attapeu province. The first is located at 10 kilometers of Attapeu city in Naphoc village. The owner's name of the fingerling producer is Mr. Phouthone. The station is operated since 1998. It produces tilapia, carp and catfish. Each year, the fingerling supply is estimated at 150,000. The fingerling production is carried out between May and October (Figure 1).

Two producers are located to Somboun (Sanxay) but they have stopped the production of fingerling in 2012 and 2013. In 2013, the ABD project has invested 20,000\$ to build fingerling ponds in the Somboun village. The capacity of the station amounts to 350,000 fingerlings (250,000 catfish and tilapia; 100,000 local fish). The project has created 22 ponds and the total area of these ponds is 2 ha. The project has intended to support poor households but after one year, a private owner produces fishes, chickens and pigs in this area. The producer name is Mrs. Savannani. She has stopped the fingerling production because the demand of fingerling is very poor and the ABD project hasn't bought a part of this fingerling production. In summary, the reasons of this judgment are the non-profitability of the production and low demand of the fish producers of Sanxay (Figure 1).

The second producer name on Sanxay is Mrs. Brinhung. She has a capacity to produce 45,000 fingerlings. But she has stopped the fingerling production because she had power cuts and the mortality rate was 90%-100%. Furthermore, she hadn't workforce to produce fingerlings (Figure 1).

The last fingerling production is located to Hom village in Sanamkixay district. The station has been built in 2013. This area is an agriculture extension Station to provide a pilot model. The model is composed by three reproductive fish ponds (one pond with 500 square meters (m^2) and two with 50 m^2) and four fingerlings ponds with an area of 91 m^2 . The station has also four cement tanks (3-4 m^2) that are used to keep catfish parents. The station is used to produce different fingerling categories including carp, silver carp, catfish and tilapia. However, during the wet season, the station has lost more than 50% of fish parents. The main problem of

the fingerling production of the station is the reproductive capacity of the parents due to flooding. The station has taken the fish parent in Naphoc and the size of the parent is very small. The capacity of fingerling production is amount of 20,000 (Figure 1).

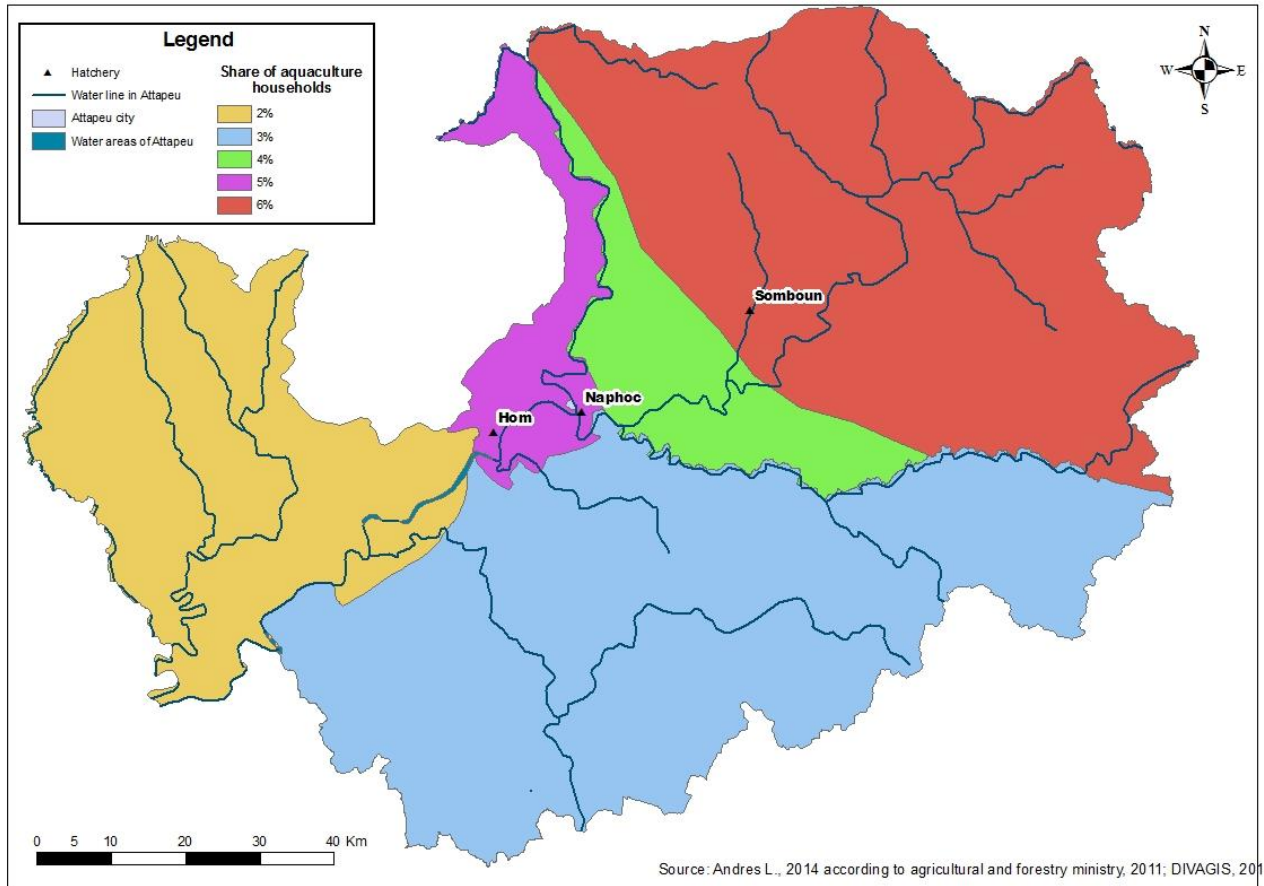


Figure 1: Localization of hatcheries in Attapeu province

The Annex 1 of the amendment of February 2014 (result 1) want set up a hatchery to provide fish for aquaculture. But the survey of 2014 (June and July) and the follow-up of activities during three years have demonstrated the impossibility of creating a hatchery. The reasons include:

- Low technical knowledge to set up a hatchery;
- The climate variation (dry and wet season);
- Low demand of aquaculture;
- Competition between capturing fish (river), imported fish and aquaculture fish;
- Low consumption of fish.

The technical to set up a hatchery is very complicated. The conditions to produce fingerling include:

- Larval rearing tank;
- Electivity and oxygen pump;
- Good quality feed in sufficiency quantity;
- Good proportion of male (80%) for Tilapia fingerling.

The four investigated hatcheries have indicated that the fingerling production is carried out between May and October because the demand is lower during the other month. Indeed, the aquaculture demand for fingerling is mainly situated after the first rain in June and July. The aquaculture producers haven't the capacity to buy a lot of fingerlings. The follow-up of the fish producers emphasizes the low number of fingerling. Each year, the farm households buy between 20 and 100 fingerlings, whereas the food security projects (ADB, HPA, ANNADYA) create a high demand for fingerling in comparison with the farmer's capacity. Furthermore, the fingerling production is enough for the demand of aquaculture. Indeed, the aquaculture in Attapeu doesn't exceed 6% of the total farm households (Figure 1).

The market of aquaculture fish enters in competition with the capturing fish and imported fish. The imported fish comes from the center of Vietnam by bus. The capturing fishes in the river (all year) and the rice fields (wet season) is realized by more than 90% of farm households in each districts of Attapeu. The competition of the imported and capturing fishes prevents the development of the aquaculture. The main constraint for the fresh fish value chain is the transport and the road. The bad state of road creates a high mortality rate in Attapeu and between Attapeu and Pakse. The sanitary conditions aren't generally respected because the transport is mainly realized by local bus. The storage is realized with ice during the transport (Figure 2).

Fresh Fish value chain in Attapeu

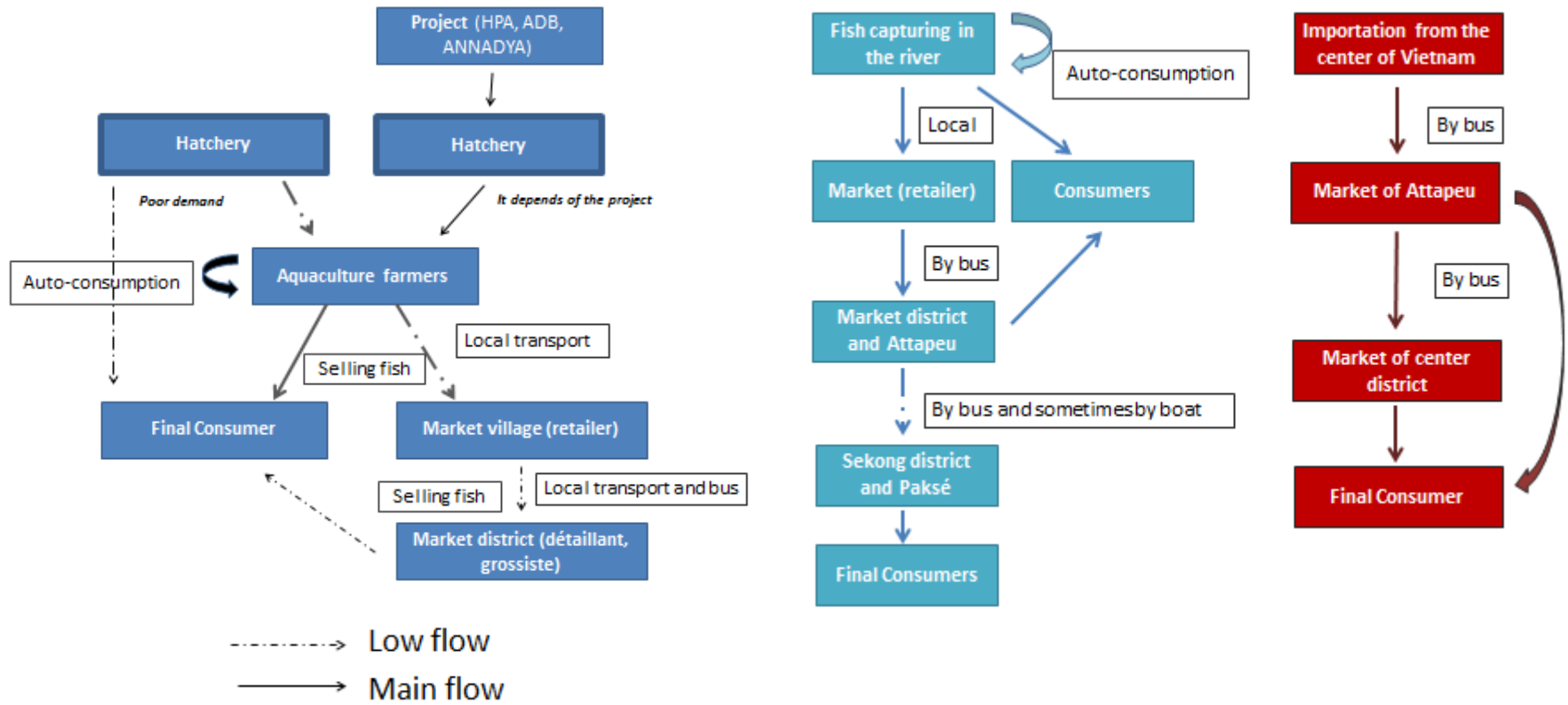


Figure 2: schematic representation of fresh fish value chain

Finally, the saturation of fresh fish market doesn't allow the development of hatchery. The hatchery in Attapeu is regulated by the seasonality, a low demand and a poor transport capacity. The purchase of fingerling in Hatchery depends of low cash flow of farmers and the purchase of the development projects for fish's distribution.

According to the survey of the project, there are about 500 fish ponds and tanks in Attapeu province. The estimation of fingerling demand capacity is estimated between 100,000 and 250,000 fingerlings per year. But the survey and follow of fish activities have shown the incapacity of farmers to buy fingerling each year. For example, a farmer of Hinlat has said: "if I hadn't had a fish distribution of project ADB. It isn't possible for me to produce fish and to buy fish during the wet season". The capacity of Hatchery is estimated at 170,000 fingerlings. According to the survey, some households go directly in Pakse to buy fingerling. This estimation explains why the project doesn't create a new hatchery, because the hatchery economic viability is compromised. Indeed, the raisons include:

- Good fingerling availability for the demand capacity;
- The low cash flow of aquaculture producers
- The low number of household to produce fresh fish in a pond or tank (2% at 6%) (Figure 1);
- The saturation and competition of fresh fish market (Figure 2);
- The low consumption of fish during the year (1 or 2 kg per year per household).

2 Conclusion

This report proves the impossibility and the non-sustainability to create a new hatchery. The two operational hatcheries (Naphoc and Homs villages) allow sufficiency access to fingerlings for aquaculture. The main problem is the reproductive potential. They don't create a good condition for the productivity. The project proposes to support the hatchery by improving the productivity of reproductive parents. These parents will be bought in Pakse. Furthermore, the project will prepare a cross exchange between the hatcheries of Attapeu and some station of Pakse in October.