SOME PRODUCTION CHANGES OF ETHNIC MINORITY IMMIGRANTS UPON THEIR MOVE FROM CAO BANG AND LANG SON PROVINCES TO DAK LAK PROVINCE (*)

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Since 1975, Dak Lak has been one of the key provinces in the population and labor re-allocation of our country. By 2000, Dak Lak had received 125,000 households with 665,000 people, 50% of which were free immigrants. People who came to Dak Lak from Cao Bang and Lang Son accounted for the biggest rate among the Highland provinces; from 1976 to 1998 migrants from Cao Bang increased to 12,772 households and 65,910 people, most of whom are Tay, Nung, and Hmong minorities. The number of immigrants from Lang Son was 5,869 households with 29,100 people, mostly including Tay and Nung ethnic groups. They account for 80% of the total number of free immigrants to the province.

One of the impacts of free immigration is the change in production and incomes of ethnic minorities. In this article, I want to refer to some changes in agricultural production, including cultivation, cattle-breeding and handicrafts.

1. Cultivation

Tay and Nung people are closed in many aspects, especially language and residence. When they arrived in Dak Lak, they continued to live near each other, in the same village or area.

In Cao Bang and Lang Son provinces, Tay and Nung people mostly cultivated wet rice, became familiar with terraced fields, cultivated two crops, and grew new varieties of rice such as *203*, *NN8*, and *bao thai lun*. They started to use new varieties of rice, chemical fertilizers, plant protection fertilizers, and started using the "loong" to thresh corn. They have reached relatively high techniques in terraced field cultivation and irrigation works. However, due to some limited conditions of the land and terrain and small area per capita (200-250m^2), maximum rice productivity was 2.5 – 3.0 ton/ha/crop, so wet fields can provide up to three - fifths of the annual food requirements of the people. Mountain fields were cultivated with one crop per year, including settled plain fields and shifted sloping fields, of which sloping fields accounted for bigger areas. People usually grew maize, pea families, cassava, taro, and sometimes cotton. Tay people's gardens are well cultivated, with many fruit trees (persimmons, pears…), specialized trees (anise, cinnamon), tobacco, and green vegetables, whereas Nung people's gardens are mainly planted favoring trees and green vegetables.

In Dak Lak, land conditions are better and more convenient for cultivation than in these people's native land. The terrain is plain, more concentrated, and more inter-

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cultivated and fertilizing, including alluvial and basalt soils, is quite suitable for the development of many groups of trees, especially the specialized commodity trees.

Besides that, lands here are mostly settled wet fields, milpas and gardens. There are no shifted cultivating fields like in these people's native land. Wet fields are mainly cultivated with one seasonal crop, coinciding with the raining season. The rice variety *203* brought from native villages was omitted due to its hard seed and less delicious flavor; the two other varieties: *NN8* and *bao thai lun* are in use together with another two new varieties: *R64* and *Lak* (which originated from a local rice variety of the E-de people in Lak lake). Peasants buy small diesel plough machines for breaking the soil besides using the familiar agricultural tools such as the plough, harrow, and hoe. They learn how to grow rice seeds in the hard fields from their neighbors. Due to good land and people being familiar with applying new methods of cultivation, using manure, chemical fertilizer, herbicides, and insecticides, rice productivity is rather high and stable, reaching an average 5 ton/ha/year on a one-crop field or 8 ton/ha/year on a two-crop field.

In some areas of early arrival and favorable conditions, such as Tam Giang commune (Krong Pak) or Ea Le (Ea Sup), all the wet rice fields of the Tays have been irrigated by complete and standard irrigation works, and cultivated for two crops, giving a productivity of 5.5 ton/ha/crop or 11 ton/ha/year (in 1999). Dry fields are specialized to cultivate short-term commodity trees, such as trees from the pea family, Chinese squash, and, recently, industrial cotton, for which seeds are provided and the output covered by the State. Some traditional root plants such as cassava and potato have been gradually omitted from cultivation. Due to plain terrain, people usually plough the soil before each cultivating season; some wealthy households rent plough machines for 700,000 VND/ha. Milpas have been rotated and used to produce two crops per year instead of one crop per year as before. Fertilizing the soil and good cultivating techniques are the preconditions which lead to the increase of products and productivity (per area unit) to more than 1.5 times compared with the unfertilized and uncultivated land. For example, in 1999, in Dak Rong (Cu Rut district), maize had a productivity of 2.8 ton/ha/crop, equivalent to 3.8 million VND/ha/crop; soy beans produced 3 ton/ha, equivalent to 7.5 million VND/ha/crop; cotton produced 2 ton/ha/crop, equivalent to 10.4 milllion VND/ha/crop. There are gardens in each household, growing green vegetables, gourd, loofah and fruit trees. Some other households, with better financial conditions, started planting long-term industrial trees such as: coffee, black pepper, and "*boi loi*".

Under the present structure of plant cultivation, the production of rice provides foodstuffs, while products from dry fields and gardens are used for sales. People are trying to gain access to better life, with delicious meals and nice clothes. At present, each household can save from 10 to 20 million VND/year after deducting

reproduction fees and daily expenses. Peasants say that the current plantation structure is only temporary, though it is suitable with their limited production funds. They realize that it does not yet make full use of the soil's potential. Many families in Ea Po and Dak Rong (Cu Rut) communes are planning to shift from growing short-term commodity trees to growing long-term industrial trees. It is estimated that each family can save from 25 to 30 million VND per year from plantation as long as product prices do not fluctuate too much. The change is taking place more clearly in other communes such as Ea Le (Ea Sup district) and Tam Giang (Krong Pak district) where the Tay ethnic minority totally shifted to growing with wet fields and cultivating long-term industrial trees. It is clear that after their move from Cao Bang and Lang Son, and the Tay and Nung arrival to Dak Lak, there have been big shifts from auto-consumption into commodity production among these groups.

The Red Yao people in Cao Bang and Lang Son provinces reside on mountain terraces with sloping terrain. For this reason they mainly cultivate terraced fields. They plant maize (as their main tree product) interlaced with soy beans, peas, taroes and plants from the gourd family. They do not plant many rice fields. The Red Yao do not grow cotton for fabric weaving, and they only cultivate one crop per year on the fields. The land is eroding so productivity is unstable and gradually decreasing. One crop wet terraced rice fields have existed for the past ten years – the techniques being learned from the Tay and Hmong – but the area of cultivation is small. In Nguyen Binh district (Cao Bang province), it is estimated that only one in ten families own terraced fields with an average of 40m^2/person, which meets only one tenth of the people's food requirements for the year. House gardens are small and temporary due to the sloping terrain. Difficult conditions in cultivation plus rapid population growth are the main reasons for food shortages during three to four months of the year.

Upon arrival in Dak Lak, there is no chance to cultivate terraced mountain fields. From cultivating almost entirely mountain fields, the Yao ethnic group now must change to cultivate settled fields, including dry fields and wet fields. Wet fields grow one to two rice crops, to provide adequate food, while the dry fields have recently been used to grow pea families, Chinese squash, maize and industrial cotton as agricultural commodities. Traditional varieties of natively grown wet rice have been eliminated and replaced by new seed varieties compatible with new land and climate conditions, such as *NN8* and *R64*, or have been replaced by local rice varieties. New cultivating methods such as softening the soil by plowing and harrowing twice, applying manure and chemical fertilizer, conducting irrigation for spring-winter crops, and using plant protection chemicals have been well applied. Some Yao families purchased small diesel plow machines for breaking the soil. Rice productivity of the Yao is lower than the Tay and Nung, but it is still much higher than in their native land (on average 4.5 ton/ha/year on a one-crop field and 7 ton/ha/year on a two-crop field). Dry fields are bigger and

more economical than wet fields. Dry fields are rotated with two crops a year, learnt from neighboring ethnic groups. The productivity and income from plants (in one area unit) in dry fields are much higher than in the native mountain fields. In 1999, for example, in a Yao village in Doan Ket hamlet (Ea Po commune, Cu Jut district), maize produced 2.5 ton/ha/crop with an income of 3.1 million VND/ha/crop; soybeans produced 2.8 ton/ha/crop, earning 6.9 million VND/ha/crop; industrial cotton produced 1.8 ton/ha/crop, totaling 9.5 million VND/ha/crop.

In some areas where the Yao people arrived in the period of 1989-1990, there have been dramatic changes in cultivation on dry fields from short-term commodity plants to long-term industrial plants. In 1998, almost all of the 210 Yao households in hamlets three, ten and thirteen of Ea M'droh commune (Cu M'gar district) had 0.5 – 1.5 ha gardens of coffee or *boi loi* ready for collection. Specialized trees are becoming the main income in the cultivation of the Yao people. Garden cultivation in Dak Lak is very important, while this type of agriculture is quite small in the Yao people's native land. Every family has a more than 1,500m^2 garden where they grow green vegetables, gourds, loofah, and fruit trees. Some households also grow coffee and black pepper.

In 1999 the amount of wet field area per household of four ethnic groups (Tay, Nung, Hmong, Yao) in Dak Lak have changed a lot compared with their native land. The number of families possessing less than 500m^2 of wet fields dramatically decreased from 19.3% to 2.7% (less than 6 times). The number of families possessing 500-1,000m^2 of wet fields decreased from 41.2% to 29.5%, but the rate of families occupying more than 1,000m^2 of wet fields grew from 39.0% to 67.8% (nearly double). Similar changes have also taken place among each ethnic group, and the rate of Tay, Nung, Yao families possessing more than 1,000 m^2 of wet fields grew from 57% to 81%, while the rate for Hmong families is 33%.

Together with the change in wet field area, the right to wet field ownership has also change. As in the people's native land, the ownership of wet fields is inherited from the ancestors (67%), whereas in Dak Lak, in 1999, it is more common for the land to be purchased or leased (80%). However, the rate of families granted the right to wet field ownership is lower than in their native land (5.4% compared with 11.1%). The number of households who created the wet fields themselves in Dak Lak has quadrupled, mostly concentrated on natural forest exploitation (98.3%) and renovation of bare hills (1.7%). The Hmong lease or buy wet fields at a lower rate than other ethnic groups, but they do more exploitation. All of the Tay, Yao, Hmong and almost all of the Nung households, when asked, admitted that they created wet fields from natural forest; therefore the forest in Dak Lak has been largely destroyed.

In a similar situation as with the wet fields, the number of households possessing small mountain fields (less than 1,000m^2) has decreased (from 25.5% down to 5.8%), and on the contrary, the number of

households which own larger mountain fields (more than 1,000m^2) has increased (from 74.6% up to 94.2%) compared with in the people's native land.

The rate of land ownership in the people's native land is much higher than in Dak Lak (48.2% compared with 2.9%). The rate of small gardens (less than 1,000 m^2) also decreased (from 90% to 54.6%). On the contrary, the number of larger gardens (1,000m^2 up) increased (from 10% to 45.4%) compared with in the people's native land. The right to garden ownership and self exploitation practices are the same as for the wet fields.

In a similar situation with wet fields, mountain fields and gardens in Dak Lak in 1999, the amount of forests owned by households tended to decrease for households with a small area of forest (less than 5,000m^2) from 80% to 66.7%. Forests smaller than 1,000m^2 do not exist, and there was an increase in larger household forest (5,000m^2 up) from 20% to 33,3% compared with in the people's native land.

The number of households who exploit forests themselves in Dak Lak is higher (83.3% compared with 60%), whereas the existence of natural forests is 100% compared with 77.8%.

The following table data prove the changes in the amount of cultivated area and cultivation income of some families from their native land (before moving) and in Dak Lak in 1999 (Table 1 and Table 2).

Table 1: Amount of cultivated area and cultivation incomes of the Tay and Nung

Names of householders	Number of people	Wet field		Mountain field/dry field		Garden	
		Area (ha)	Income (million VND)	Area (ha)	Income (million VND)	Area (ha)	Income (million VND)
In native land, before migration							
Nguyen Kim Dinh	7	0.15	2.4	0.2	0.7	0.02	0.3
Lang Van Tien	8	0.30	4.5	0.3	1.3	0.03	0.5
Chu Thi Lien	7	0.40	5.5	0.2	0.8	0.04	0.6
Nguyen Van Man	5	0.20	3.5	0.4	1.0	0	0
Total	27	1.05	15.9	1.1	3.8	0.09	1.4
In Dak Lak, in 1999							
Nguyen Kim Dinh	7	0.5	8.5	1.0	12.0	0.25	4.0
Lang Van Tien	8	0.6	9.0	1.8	20.0	0.15	2.5
Chu Thi Lien	7	1.0	15.0	2.0	24.0	0.50	6.0
Nguyen Van Man	5	0.3	4.2	0.9	12.0	0	0
Total	27	2.4	36.7	5.7	68.0	0.9	12.5

Source: Quick urban assessment of Tay – Nung group in hamlet 8 of Ea Po commune, dated 25/5/2000.

Comparing the two periods: In their native land, and in Dak Lak in 1999, we can see that the average area of cultivation (wet field + milpa + garden) per capita of the Tay and the Nung increased from 830m^2 (in Cao Bang, Lang Son) to 3,300m^2 (in Dak Lak), a four-fold increase. However due to fertilizing the soil the average cultivation income per capita (wet field + milpa + garden) increased from 780,000 VND/year (in Cao Bang, Lang Son) to 4.3 million VND/year (in Dak Lak), more than a five-fold increase.

Table 2: Amount of cultivated area and cultivation incomes of the Yao

Names of householders	Number of people	Wet field		Mountain field/milpa		Garden	
		Area (ha)	Income (million VND)	Area (ha)	Income (million VND)	Area (ha)	Income (million VND)
In native land, before migration							
Ban Yao Tong	8	0.08	0.5	2.5	5.5	0.03	0.2
Ban Kim Yao	6	0	0	2.0	4.0	0.01	0
Trieu Su Phin	6	0.06	0.4	2.5	5.0	0.03	0.4
Trieu Quay Sinh	8	0	0	3.0	6.5	0	0
Total	28	0.14	0.9	10.0	20.0	0.07	0.6
In Dak Lak in 1999							
Ban Yao Tong	8	0.4	5.0	1.5	10.0	0.2	2.5
Ban Kim Yao	6	0.25	3.0	1.2	8.0	0.1	1.5
Trieu Su Phin	6	0.3	3.5	1.0	7.0	0.4	3.0
Trieu Quay Sinh	8	0.5	6.5	1.2	9.0	0.15	2.0
Total	28	1.45	18.5	4.9	33.0	0.85	9.0

Source: Quick urban assessment of Red Yao group in Doan Ket hamlet, Ea Po commune, dated 25/5/2000.

Comparing the two periods, we can see that the average cultivated area (wet field + mountain field/milpa + garden) per capita of the Yao in Dak Lak decreased compared with the area in Cao Bang, Lang Son (from 3,870m^2 down to 2,571m^2), but due to more fertilization of the soil and larger wet field areas (from 50m^2/head to 520m^2/head), the average cultivation income per capita has increased from 765,000 VND/year to 2,165,000 VND/year (nearly triple). Incomes from cultivation were even higher in the areas where the people planted specialized trees. In 1998, the average incomes of the Yao in hamlets three, ten and thirteen of Ea M'droh (Cu M'gar district) including coffee and black pepper, was 3.5 million VND/ capita/year. In their native land, the Yao people often suffered from shortages of foodstuffs for two to three months of the year. Now, in their new land

they can afford food and clothing. Some families are even improving their living conditions and can afford delicious meals and nice clothes. At present, each household can save on average five to ten million VND per year after deducting reproduction fees and daily expenses.

The Hmong in hamlet nineteen of Dak Rong commune - in their late arrival - faced many difficulties with land cultivation. An area of 1,500m^2 granted to each household included a living place and cultivation land, but the people are not able to support themselves. Consequently, they had to rent lands from the Tay people to cultivate wet rice with 250,000 VND/360m^2/year (each harvest 3-4 ton/360m^2/year). About 60% of families lacked food during three to six months of the year so they had to work for the Tay, Nung, and Kinh, earning 10,000 – 15,000 VND/day. They have few buffaloes and cows, so they have to rent plows and harrow machines at a rate of 50,000 VND/360m^2. They grow maize (the same as in their native land), peas and also cultivate wet rice and industrial trees which they learned from the Kinh and Tay. Incomes from various sources of the Hmong people are about 500,000 – 600,000 VND/capita/year[1].

2. Cattle-breeding

In Cao Bang and Lang Son, the people already paid attention to raising animals and poultry. However, lack of favorable conditions and too cold winter weather meant grass areas were not always available and animals often died of diseases. However, people still raised lots of animals and poultry such as buffaloes, bulls, horses, pigs, and chickens, and raised fish in ponds, lakes and the river's calm sections. Some families also raised honeybees in the jungle. In general, the breeding methods among the Tay and Nung were only spontaneous, old techniques, with low quality race and low productivity.

In Dak Lak, the people continue to raise cattle, but under new conditions. The buffaloes were replaced by bulls when buffaloes were not able to adapt to the new harsh environment (harsh weather, less jungle). Each family raises one or more cows, which are used to pull and plow the land. Pig raising is more developed than in their native land, when the people are provided with new breeds and the pigs are fed by industrial methods. Almost all households raise pigs, from several to more than ten, mostly used for commodity purposes. People brought chickens, dogs, and cats from Cao Bang and Lang Son. Chickens were raised in every family, as a kind of food and also for selling. They replace the free-range method with a more careful method given to the cattle and animals.

Fish's raising in the ponds is more developed than in their native land. According to the people, raising pond fish was practiced by 25-30% of the total number of households in Cao Bang, Lang Son. But in Dak Lak, the rate has increased to 45-50% of households. The area of ponds per household was more than 10m^2 in their

[1] Mr. Hoang Van Dinh, a Hmong person, head of hamlet 19, Dak Rong commune.

native land, and now in the new land the area of ponds per household is much bigger, from 100 to 1,000 m^2.

According to a survey in Cao Bang, Lang Son, 100% of Tay families possess a pond that is less than 100m^2, inherited from their ancestors. The Nung, Yao and Hmong families do not have ponds. In Dak Lak, many households have bigger ponds. Tay, Nung, Yao households all have ponds, mainly rented or purchased. About 45.8% of families have a pond that is less than 100m^2, 37.5% have a pond that is 100-500m^2 and 16.7% have a pond that is more than 500m^2. The Hmong families do not have ponds. This is due to their habits and their unsettled living style. In their native land, household ponds were inherited from ancestors, but in Dak Lak people have to rent or purchase (62.5%). Some households create ponds themselves (29.2%) and only a few households were granted the right to land use (8.3%).

Households raise pond fish and often raise ducks for eggs and meat to support their daily meals. The duck group is not big, normally less than 100 ducks per family. Other animals such as cows, pigs, and fish of the Tay and Nung people from Cao Bang, Lang Son in hamlet Eight, Ea Po commune (Cu Jut) had potential to become pivotal cattle, moving from an auto-consumption to a commodity purpose.

In Cao Bang and Lang Son, the Yao people raised cows, pigs, and chickens. However, the cattle and poultry groups could not develop due to the cold weather, and often died of diseases and waning grass fields. On the other hand, the people cannot raise ducks and fish in the highlands. The purpose of breeding was for pulling power and self-sufficiency in food. In common sense, it is a backward method, which is spontaneous and has low productivity.

Upon arrival in Dak Lak, the Yao had more chances to develop their breeding experience. They still raise buffaloes, cows, pigs, and chickens, but with larger quantities, and buffaloes and cows are used for pulling power. All families raise pigs, from several to more than ten pigs, which are sold to markets. Raising pond fish was not available in their native land and has now started to develop, with 8-10% of households raising pond fish, with area 500-1,000m^2/pond. Fish are used as food and partly for sales, becoming a remarkable income in some families. Like the Tay and Nung people, the Yao's breeding is moving from an auto-consumption purpose to a commodity purpose. The Hmong also breed pigs, chickens, buffalos, and cows but with small quantities (hamlet Nineteen of Dak Rong commune in 2000 consisted of 65 households which had only four to five buffaloes and cows). Buffalos and cows are for pulling, pigs and chickens are for food, and no products are for selling in the markets.

3. Handicrafts

In Cao Bang and Lang Son, handicrafts were quite well-developed including knitting, fabric weaving, iron molding, stone carving, brick making,

corrugated-tiles, bamboo tables, sugarcane processing, and distilling volatile oil. Some of the Nung people know how to make handicraft papers. Fabric weaving contains different identities between ethnic groups: the Tay developed weaving techniques from silk (by raising silkworms), while the Nung demonstrated weaving techniques from cotton trees. Handicrafts of the Yao and Hmong are poor and backward, included knitting, embroidery and molding. Dresses with complicated and skillful textures are famous handicraft products. Knitting is conducted by men, in order to support household items. In some Yao villages people make rice papers, used to write scripts. There is one amateur blacksmith in a village, which mostly repairs agricultural machines.

In Dak Lak, almost all of the handicrafts production was diminished due to a lack of material sources and influences of commodity economics. Knitting cannot be maintained due to the shortage of materials. People would have to travel a long way to get material; therefore, all knitting products were bought from the market. Fabric weaving cannot continue when many industrial knitting products are overflowing in the markets. Iron molding, stone carving, brick making, corrugated-tile, bamboo tables, sugarcane processing for honey, distilling volatile oil, and paper making have gradually vanished due to a shortage of materials and competition from diversified products in the markets. Only a few villages have blacksmiths who have continued their work repairing peasant's agricultural machines.

4. Some ideas

History proves that when there is a change in the residing environment, it will lead to a change in culture. The environment here can be understood as both the natural and the human environment. Change in culture is the manifestation of cultural functions.

Free migration has profound effects, both positive and negative, on economic, social, cultural, and ecological environments in Dak Lak. The people have created large cultivation and production areas, develop the economy in remote lands, establish new living centers and new administrative units, looked for jobs, been active in eradicating hunger and reducing poverty. Besides that, migration has broken up the local master plans, affecting the province's economic structure. The changes such as the transferring process from auto-consumption to commodity production in cultivation, breeding, handicrafts, and trading services among the Tay, Nung, Hmong, and Yao people are taking place dramatically. Household cultivating area is bigger. Plant cultivation tends to reduce paddy grains and agricultural products and to increase industrial and fruit trees. Investment in production and business are increasing. Production tools are more diversified and plentiful.

Based on the above analysis, we can see that the ethnic minorities in Cao Bang and Lang Son who moved to Dak Lak have quickly adapted to their new living environment. They have made many changes in production, business, and incomes in conformity with the new residence's conditions and the character of commodity productions.