

RISK AND RISK MANAGEMENT IN A TROPICAL REGION- VIETNAM THROUGH AN AFRICAN EYE

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ABSTRACT. - Risk and Risk Management in a Tropical Region- Vietnam Through an African Eye. Tropical countries are known for physical and social risks, their principal vulnerability and the limitations of risk management. These issues are bundled in the case of Vietnam. The country had to recover from devastations of decade long wars and Stalinist policies for the one and for the other there is the need to combat ordinary threats like damaging floods, soil erosion or deforestation in combination with general poverty and exposure to parasitic diseases. However, the country shows that it is possible to manage a tropical region contrary to the rumours of principal weakness out of limited physical resources. In contrast to other – comparable – countries it had been possible to repair huge ecological damages, even under the burden of a rigid Stalinist regime and war-economy and to drastically reduce the hunger and poverty of the people. Today there are signs of two contradicting developments. For the one there is a sophisticated agriculture based on traditional experience of a “hydraulic” society and extensive use of new techniques and for the other an overexploitation of natural resources with an immanent risk of degradation. Today it seems, that on some fields - as protection against damaging floods and river regulation the country has reached its limits and on other fields they have to limit exploitations or to develop protection measurements. Concerning risk and risk management the greatest problem is that there is no buffer anymore on various ecological fields; even the exploitation is based on old and adapted traditions.

Introduction

There is much reasoning on the principal weakness of tropical regions concerning their development potential out of principal ecological „handicaps“ such as the limited agrarian potential of tropical soils for crop production, their high potential to soil erosion as well as exposure of people to parasitic diseases and poverty as a general phenomena (Manshard and Mäckel 1995, Hallé1993, Weischet 1980). However, the acceptance of the tropics as old cultural landscapes is still in slow progress (Maire et al 1994, Pomel and Salomon 1998) not to talk about the recent principal changes in the landscape system in relation to risk exposure and diseases and as well as for further disadvantages within a changing climate system (ADPC 2003, Fleischer and Schulz 2001, Lozan et al 1998).

Most of this reasoning concerns tropical Africa since wars and social conflicts focus the attention to these regions and there is a great risk of pretension to incorporate all the other tropical regions under the same scheme of degradation.

Thus Vietnam will serve as a good example to answer questions, whether it will be possible to restore and properly run a formerly destroyed tropical country and to assure the basic needs of the population e.g., to fight hunger and to provide access to drinking water and other basic necessities. This could be compared with the case of Nigeria, well known for its economic potential as the 5th export nation for crude oil but also as an example for poverty and hunger.

The setting of Vietnam

The figs 1 and 2 describe the general geophysical situation and also the prevailing risks for the population. Vietnam is principally divided on various fields. The country has two geophysical features: the flat lowlands and the mountains rising up to 3143m in the North.

Only 1/3 of the surface belongs to the lowlands - mainly the deltas of the Mekong and Red River, whereas the long coastal zone provides only a small lowland zone. This affects as well the climatic situation. The global position of Vietnam at the eastern side of Southeast Asia and within the tropics causes a monsoon climate in the seasonal alternation between the south-western (summer) monsoon and the north-eastern (winter) monsoon or trade wind, both carrying humidity. The amount of precipitation is always high (up to 2700 mm in the North), however, this alternating system of monsoons creates a region with a definite dry period in the central part of Vietnam, where the rainy season lasts for about five months. The relief exaggerates the precipitation regime. This is visible in the centre (Dalat), where the dry season is short related to the coast and in the North, where it is totally suppressed. The cordillera also caused a "Föhn" effect in forcing the south-westerly winds to rise and to transform into warm falling-winds. The end of summer is as well the season of typhoons mainly directed into the northern part of the country (see fig. 2). These two features already create a principal threat for the soil cover. The prevailing soil types of the country belong to the Acrisols (ferric or orthic) in other classifications deep weathered and leached yellow tropical podsollic soils, Ferralsols as deep weathered red tropical soils with an enrichment of iron and aluminium oxides also classified as latosols or ferralitic soils. Both groups are less fertile and prone to soil erosion. Gleyic soils with a changing groundwater regime, however, are the base of the intensive production in the alluvial plains and deltas (UNESCO/FAO 1976, Moorman 1961).

The country is divided both in cultural and in economical terms. Not so much by the former political division, rather than by ethnic and economic components. 54 ethnic groups are known but 87 % of the population belong to the Viet proper or Kinh. It is also apparent that the Viet population exploits mainly the lowlands, whereas the other groups mostly belong to the mountainous regions. There is even a migration of the Viet to the mountains during the last decades.

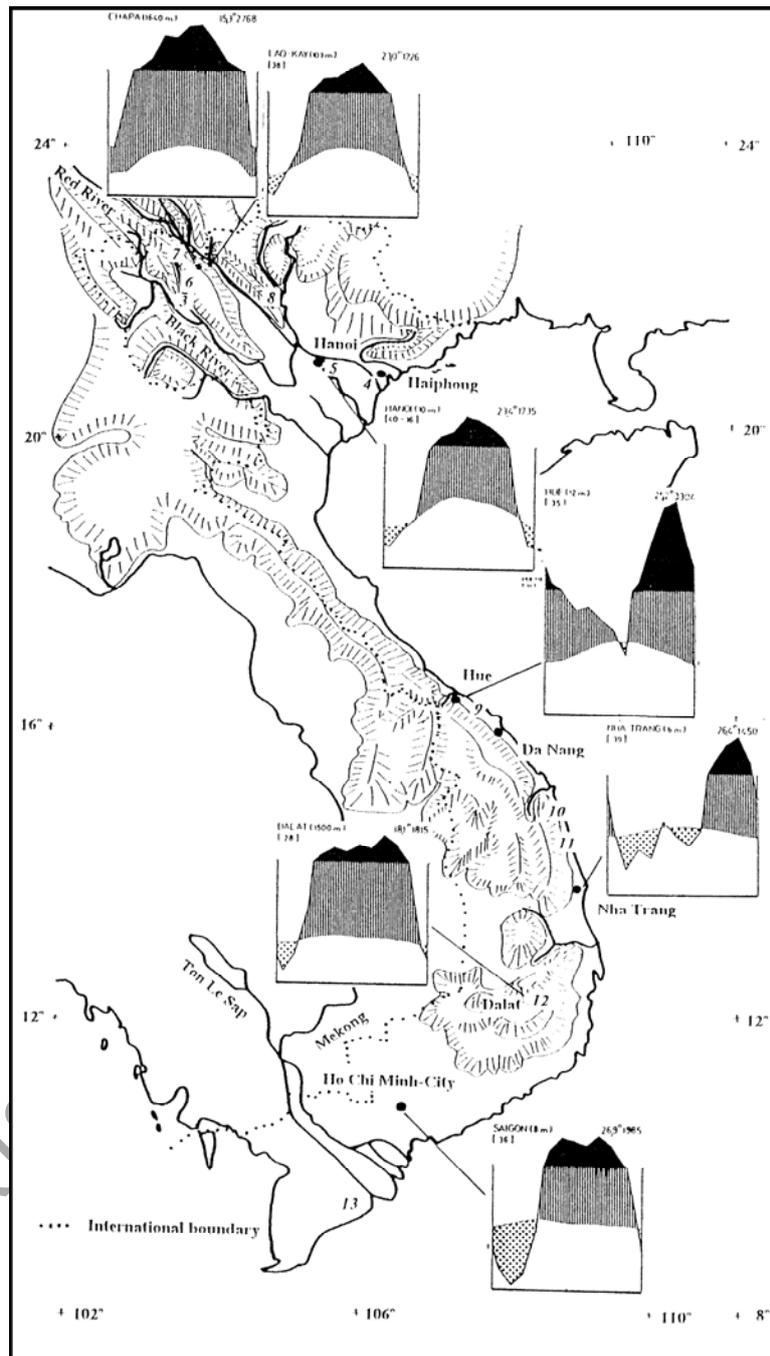


Fig. 1. Map of physical setting of Vietnam. Climate diagrams from Walter et al. 1975

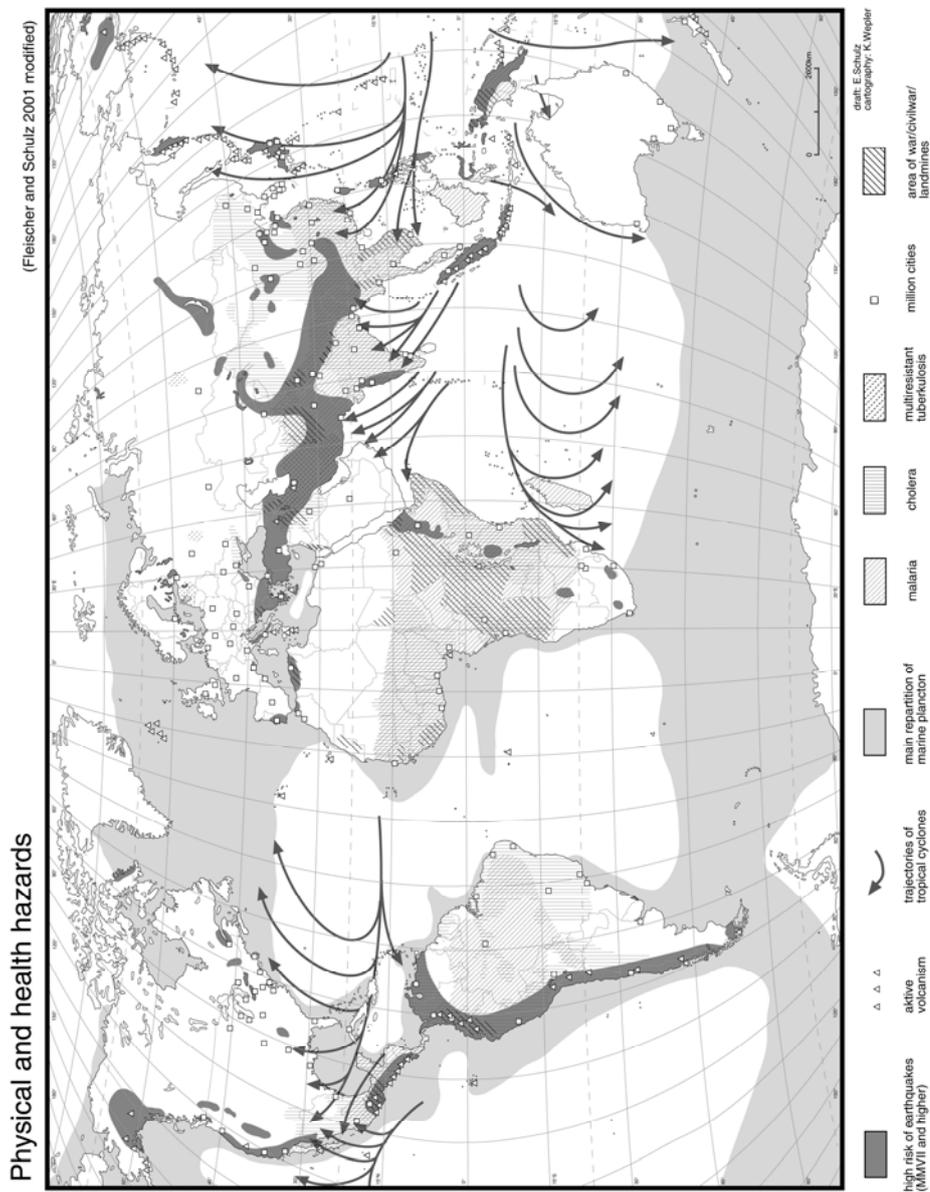


Fig. 2. Map of physical and health risks. From Fleischer and Schulz 2001 modified

The Viet economy is based on the cultivation of wet rice whereas the other groups have a mixed economy including and extensive corn growing on shifting fields and intensive rice cultivation on smaller terraces combined with various other activities. An official statement is as well that this division reflects a more or less colonial view (see Le Ba Thao 2000), however, the government's policy is still ambiguous with regards to the mountain population. Where there is now an official acceptance of the equality of culture and economy by the government - visible in the new concept of the Ethnological Museum of Hanoi - there are regular exceptions of laws such as the rigid family planning, which is not valid for the mountain population.

However these principal divisions do not totally explain the present landscape. One has to remember that Vietnam has two severe heritages. The first is half a century of war-economy and severe damages during the three Indochina wars from which the second still provides threats to the population. Defoliation, intensive bombing and mining of large areas as well as targeted bombing of highly vulnerable civilian installations such as dikes resulted in an ecological destruction of forests and agricultural zones which still directs the present landscape dynamics. The second is the severe Stalinist regime and plan economy, which caused a long period of hunger, shortage, poverty and suppression even after the end of the Indochina wars.

Since the beginning of the 1990ies the economic situation changed. The communist party declared the liberalisation of the economy and also started again an agrarian reform with a certain type of re-privatisation after those of the 1950ies and the collectivizing of the 1970ies.

However, this economic liberalisation was not accompanied by an intellectual liberalisation.

Thus it is interesting to watch a tropical country for the way in which it was possible to cope with immanent threats and to restore large devastated areas apart from psychological and sociological traumata.

Some dry statistical values may characterise the situation of Vietnam in comparison to two other poor tropical countries with comparable traits such as a long colonial history, independence after civil war, changes in the political regime and comparable physical conditions.

All comparison has its limits, however, the fact remains, that the country with a certain physical wealth (5th export nation of petrol) still is known for hunger and poverty of its population - on the background of comparable physical and historical conditions. It is obvious that the economic revenues are distributed unequally amongst the population of Nigeria and Vietnam. An indicator of poverty is as well the lower life expectancy and the drastically lower education situation of Nigeria and even more of Bangla Desh. A general change of economy is visible in the repartition of revenue and employees. Whereas most of the population are still occupied in agriculture, the industry and the tertiary sector activities earn greater revenues. Nigeria earns the greatest income from the industrial sector and has created the image of a better-

developed country. In general, two of these indicators are important: that of the high education rate and the higher Human Development Index.

Statistical information and comparison of three tropical countries (Baratta 2003)

	Vietnam	Bangla Desh	Nigeria
surface (km ²)	331114	147570	923768
inhabitants	79526000	133345000	129875000
inhabitants/km ²	109	139	152
GSP (mio \$)	32762	48617	37132
GSP/inhabitant	410	360	290
Population increase (%)	1,9	2,1	2,9
life expectancy	69	62	46
analphabetism (% m/f)	5/9	50/69	27/42
access to sanitary equipment	47	48	54
access to drinking water	77	97	67
GSP/ employees (%)			
agriculture	24/62	23/56	30/33
industry.	38 /13	25	46
tertiary sector	39/24	52	25
expenses of govern. (%)			
military	2	2,5	1
health	4	12	3
education	14	11	3
unemployment %	6.3	2,5	45-50
HDI	109	139	141

From this general reflection one should expect some immanent threats and risks for Vietnam, which for the physical factors belong to damage flooding, soil erosion and threats from warfare and its remnants.

Even a short travelling should give some imagination whether and how a tropical country could cope with these threats and what risks the population is exposed to.

The landscape. Risk, vulnerability and management

A. Inundation and damage floods

The figs 3 to 5 and also 13 might explain the general situation of inundation risks.

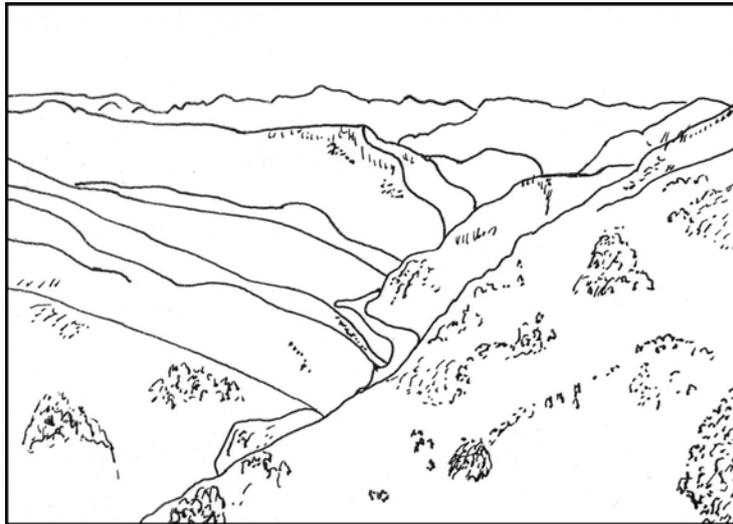


Fig. 3. View to the deeply incised valley of the Black River east of Lau Cai.
After Robequain (1930).

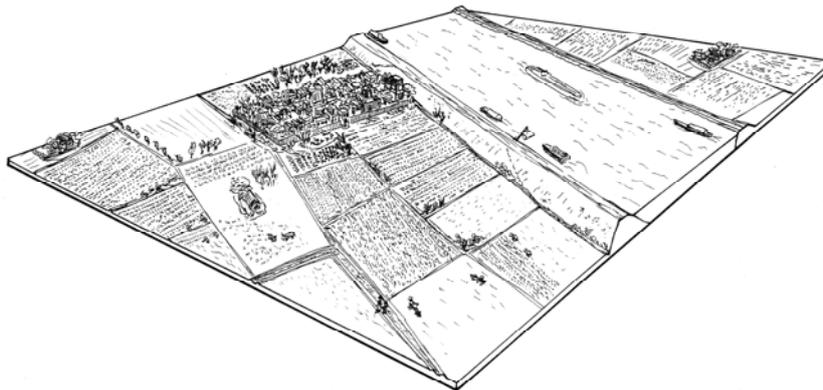


Fig. 4. Block diagram showing the High Dam River situation of the Red River Delta near Haiphong. The river is completely diked and rises during flood periods to about 6 ms above the surroundings. Viet villages are very narrow and surrounded by fences of hedges. The relatively large fields are due to the last agrarian reform e.g. redistribution of soil parcel's. Rice is growing in seedbeds and afterwards replanted in the inundated fields

The upper and middle valleys of the Red and Black Rivers are narrow between steep slopes. It means that there is no possibility to store excessive water during flood situations in this part of the river. Fig.4 explains the situation of the Red River Delta near Haiphong. The branches of the River are high dam rivers,

rising to about 5 to 6 ms above the surrounding plains during flooding. These plains are intensively exploited by wet rice growing. The cultivation area consists of main and secondary channels, which are used to fill and drain the fields. These are relatively large parcels, which is a result of the collectivizing of formerly small fields (see Lacoste 1984 and Pham Xuan Nam et al.2001). These fields are now distributed by the village to the cultivators remounting to an old tradition of semi-suzerainty and autarky of the village -from communalism to communism and back (Lacoste 1984). They serve mostly for rice but also for vegetables or manioc or grassland for animal growing. Rice is grown in special fields and afterwards replanted to the fields. Two harvests may be achieved with a yield of 3,8 to/ha for the autumn harvest and to 4,3 to/ ha for the winter/spring harvest (Le Ba Thao 2001). The fields are ploughed and harrowed with help of buffaloes before they are inundated and planted. Man does inundation by means of pumps or by hand with simple recipients. The Viet villages in the plains are very densely inhabited and normally surrounded by fences or hedges. Houses are very small but high since ground is limited. Since the last years a lot of new houses were constructed proving new wealth of people and their first investments.

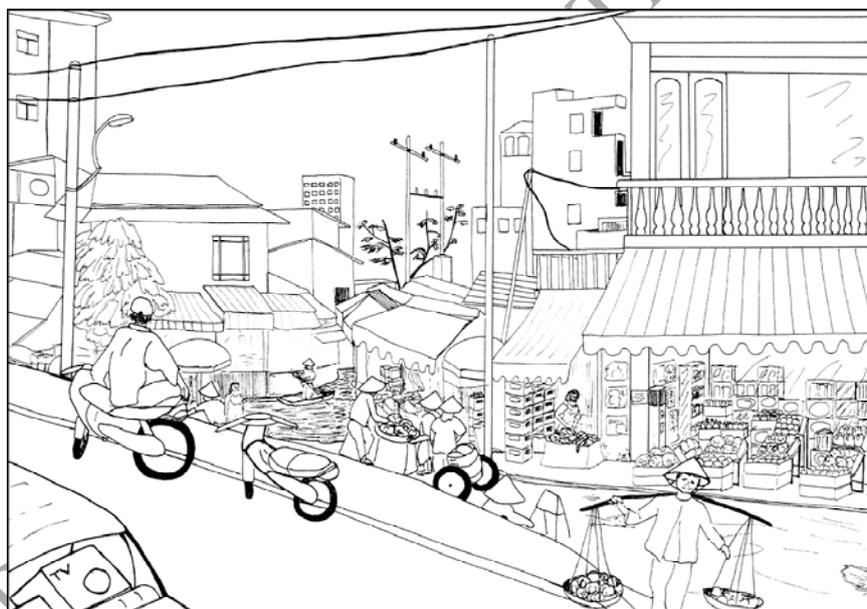


Fig. 5. Flood risk management in Hanoi. Dyke surrounding of the central city of Hanoi. Ordinary flooding during summer and formal/ informal markets. An about 3 m high dam separates the inner city of Hanoi from the riverside quarters. It is used as road. Passages can be closed by high flood situations closing the population from the city. During ordinary flood situation water table rises to the foot of the dam, but normal life continues. The dense settlement of the quarter is notable.

B. Intensive versus extensive land use. Deforestation, afforestation and soil erosion

The mountainous area northwest of Hanoi and near the Chinese border gives some good examples of the present situation concerning the risk of soil erosion (Fig. 6 to 8). Built by Precambrian gneisses and schists, mountains rise up to 3000 m altitude presenting very steep slopes and narrow valleys (see fig. 3). This is the area of the H'Mong and other ethnic groups. Two striking phenomena are visible. For the first it is an intensively used and cultivated area in a small-scale manner. Slopes are transformed to small rice-terraces, which for the most are built or reinforced with stones and covered with soil material from the deep weathered Acrisols or tropical podsollic soils. They are watered by a complicated system of pipes. Under the present law land is allocated by the government to farmers' families for a period of about 5 years (Gayfer and Shanks 1991). However, the government policy with regards to the mountain peoples is still ambiguous, even the tendencies of decentralisation and incorporation of the local communities seem to increase (Zingerli 2003). The land use also comprises gardens of vegetables, manioc or cocoyam (*Colocasia*). Villages are not as dense as in the plains, and a traditional animal holding near the houses comprises buffaloes, pigs or poultry.

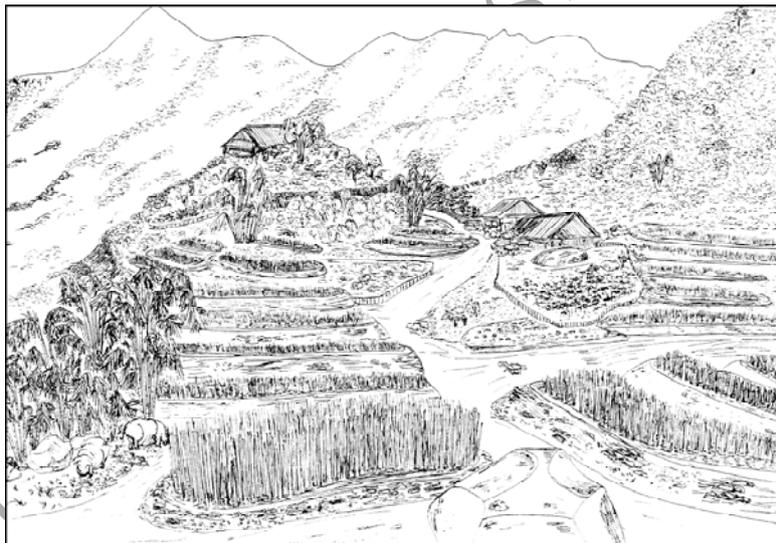


Fig. 6. Intensive cultivation in the mountains near Sa Pa at about 1200 m altitude. Rice, manioc, and vegetable cultivation. The traditional agriculture of the H'Mong population comprises wet rice in small terraces and basins and corn on shifting fields. Stones often reinforce the rice terraces. There also is garden cultivation of manioc and various vegetables. Large pigs are held near the house. Poultry is kept in large stalls. The former forest cover is completely removed and replaced now by a secondary bush with only few remnants of the former tree vegetation. Bamboos take the place of trees in these landscapes

The second picture is shown on the slopes. Once densely covered by a diverse forest rich in species today these slopes bear only a secondary bush with very few remnants of the former tree vegetation. So bamboo stands take over the part and function of trees. Denudation was accelerated since the 1950ies, when after the collectivisation state enterprises could log intensively (Gayfer and Shanks 1991)

Parallel to the intensive terrace cultivation corn is grown on the slopes on shifting fields, with perhaps a reduced risk of soil erosion as long as the secondary one - the slope bush - is not completely removed. Sometimes there are also farm installations like the trellis for the cultivation of coyote (*Sechium edule*), a cucumber of Mexican origin. It is a typical cash crop and destined to the markets of Hanoi and other cities. It demands as well capital, initiative and knowledge of the families, which run these plantations as well as an organised transport system. The extensive soil exploitation however is visible too as fig. 8 explains. On a family scale lopes are cleared, partly burned and cultivated in the shifting manner for corn. Parallel those families try also to have some rice fields or manioc gardens. It is obvious that soil erosion is incorporated in this type of cultivation, but still a secondary bush cover may impede it. Road cuts in this region cause much more damage fore instance numerous sliding.

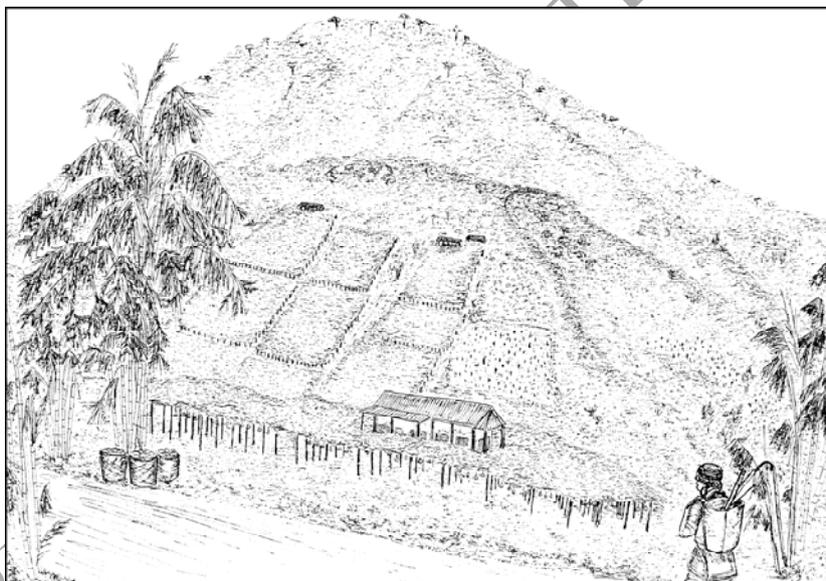


Fig. 7. Intensive and extensive cultivation in the mountains near Sa Pa at about 1200m altitude. Corn is grown on shifting fields and there is a trellis cultivation of coyote (*Sechium edule*). This pumpkin is of Mexican origin and today it is cultivated in the tropics at an altitude above 1000 ms. The pumpkins are destined for the vegetable markets of Hanoi. The trellis cover whole slopes and the harvest is picked by lorries. Three baskets are already prepared for the transport. Note the complete cover of secondary bush on the slope with only few remnant of the former tree vegetation. An H'Mong woman comes back from fieldwork.

This situation is aggravated near the coast as the fig. 9 to 11 may explain. A view down slope to a bay south of Hue shows the mode of intensive use of the coastal areas. Rice fields cover the whole interior of the bay and for the village is only a small place down the slopes. At the coast itself basins are constructed for shrimp farming and the local fishery is based on the wear basket in the shallow water. Shrimp farming is in plain extension today and for the year 2005 the government expects about 700000 ha (Vietnam News 8/02). A look at the slopes however explains the history of the country. They are completely afforested with *Eucalyptus* or *Pinus* -trees in order to cover them after the destructions from the second Indochina war and also by woodcutting for fuel afterwards.

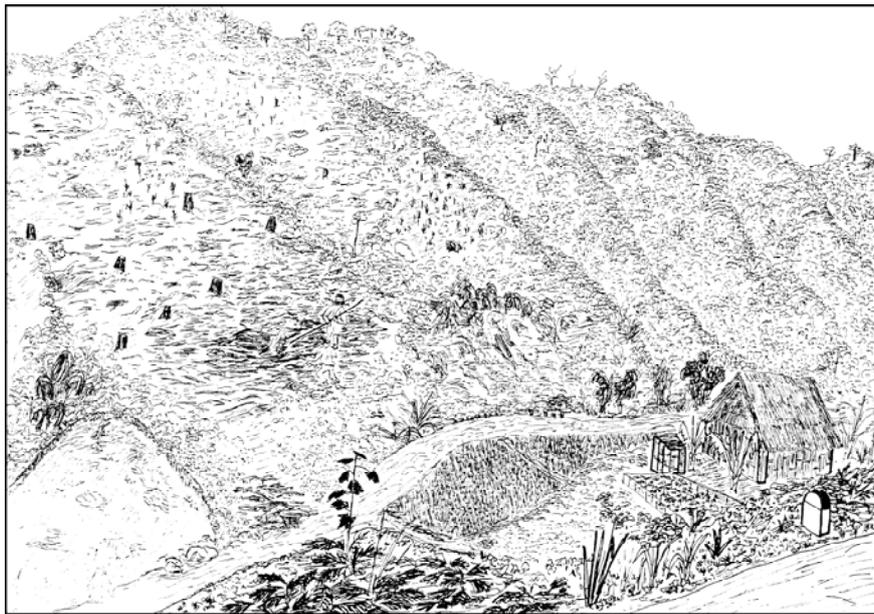


Fig. 8. Landscape of subsistence economy in the mountains north of Yen Bay. The steep slopes are completely deforested and now covered with secondary bush. Cornfields are prepared with fire after woodcutting. Fields are only cultivated by an H'Mong family for a limited time. Beside the brook a rice field was constructed and planted and a small house constructed. On the terrace also are small manioc gardens. The slopes are prone to soil erosion as the cuttings near the brooks are showing.

An extreme example of individual based extensive exploitation is given by the shifting cultivation south of Quy Non. Slopes are for the most denudated even from the secondary bush and the area is exploited in the slash and burn manner for corn growing. Protections against soil erosion are very rare. North of Tuy Hoa a certain compromise between the shifting cultivation and intensive rice growing is visible. A system of hedges and small terraces may reduce the greatest risks of soil erosion.

On the basaltic Dalat-Plateau at about 1500 ms altitude an extreme combination of intensive market oriented exploitation and remaining forest cover is visible. The deep soil-cover (rhodic ferralsols or red lateritic soils) is opened and terraces of different sizes are constructed without any visible protection for the new and steep slopes. Vegetables and fruits of all sorts are grown. They are destined for the markets of Ho Chi Minh city (Saigon). This for the one provides a certain wealth for the cultivators and also demonstrates the economic liberation politics of the last decade. However, the other side is the open visible risk of soil erosion. The system demands constant repair and observation however it is not clear whether the population has the same intension and tradition as that of the hydraulic societies of the deltas. Apart from the revenue from cultivation, the differences to simple road cuttings are not very big as far as soil erosion is concerned. The scale of some 10 millions sqm. of soil, which is lost in the rainy season (Pha Xuan Nam et al 2001) seems to be reasonable and soil protection certainly is one of the most important targets of management in this region. The plateaus also host most of the tea and coffee plantations. Vietnam today is the second nation concerning rice and coffee production (Le Ba Thao 2001).



Fig. 9. View over a bay south of Hue and the intensive cultivation at the coast. The steep slopes of the coastal range were completely devastated during the second Indochina war. They were reforested with rapidly growing trees of the *Pinus*- and *Eucalyptus* -genera, as it was the example in various regions. The bay also shows the belt of cultivation in coastal areas. From the landside there are rice field, the aquaculture basins for the shrimp cultivation and installation for the fishing. Cultivators are living in a small village near the slope. The soil outcrop near the road shows the danger of soil erosion in the deep weathered acrisols.

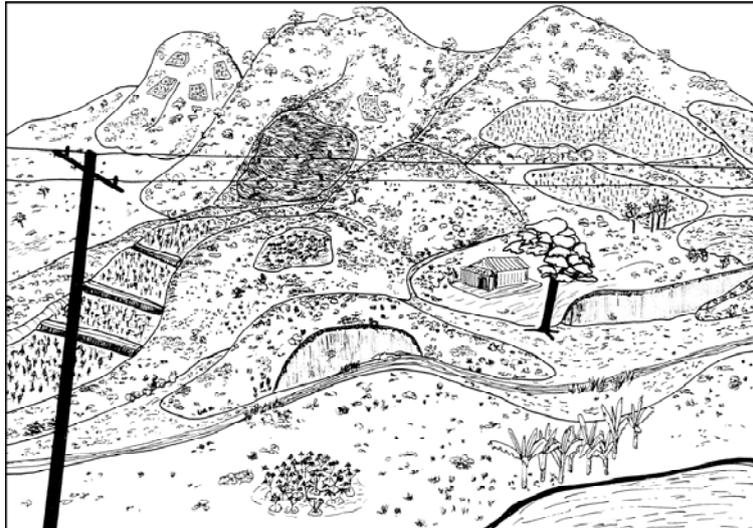


Fig.10. Landscape of extended shifting cultivation of the steep slopes south of Quy Nhon.. Slopes bear only a loose grass cover and some few remnants of former forest cover. The region has deep weathered acrisols with a low fertility and is prone to soil erosion. It is a typical landscape of subsistence economy without any anti –erosion-measurements.

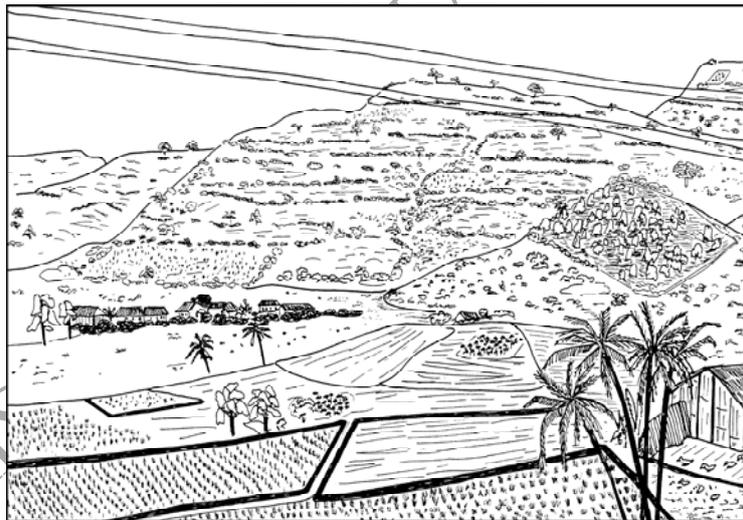


Fig. 11.Landscape north of Tuy Hoa. Mixture of subsistence cultivation of corn on the slopes, some plots of reforestation and rice fields in the coastal plain. Small village an separated huts. Cocos-palms are indicators of tropical tree cultivation. In contrast to the anarchic shifting cultivation some protections against soils erosion are take in a system of hedge plantations on the slopes.

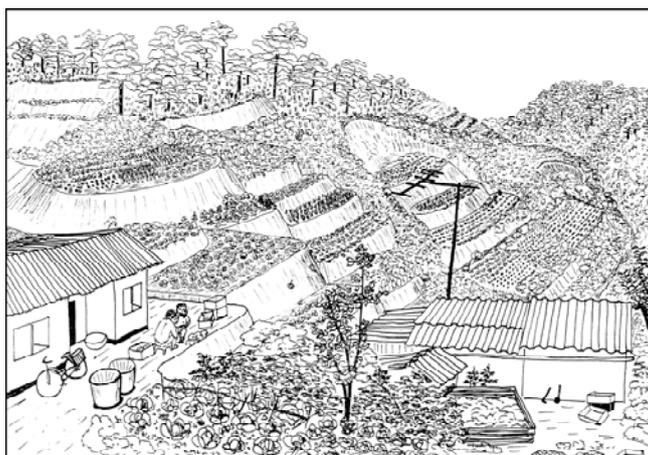


Fig. 12. Landscape of intensive vegetable and fruit cultivation on the basalt plateau near Dalat at about 1000 ms altitude. The *Pinus* - forests stands on a deep weathered lateritic (acrisol) soil. The soil cover is opened and a system of deeply cut terraces is established in order to cultivate vegetables and fruits for the Saigon markets. Small families intensively labour the terraces in their own responsibility and initiative. However there are almost no anti-erosion measurements.



Fig. 13. The landscape of remaining threats. The southeastern part of the Mekong delta still shows the results of the defoliations during the second Indochina war. These belts are still impossible to cultivate and are cover with grasses of bamboos. However, compared with satellite images from 1985 are greater part of these areas did recover superficially. The outer part of the delta shows the belt like arrangement of rice fields, basins for shrimp cultivation, the remnants of the formerly extensive mangrove stands and the sedimentation belt in the shallow water. Contrary to the Red River Delta the Mekong delta is not diked and also large part of the mangrove still exists

The figure also shows a large scheme of rice cultivation in the interior.

C. The inherited threat

A view on the Mekong delta shows still the legacy of war. The south-western part of the delta presents a very open arrangement of exploitations. It comprises the rice fields the basins for shrimp cultivation and the parcelled coastal forest and mangroves surrounded by the sediment belt in the shallow water itself.

In contrast to the Red River Delta the Mekong Delta is not as regulated or diked. However the former coastal forests and mangroves still are better conserved as in the Red River Delta, even the cutting and installation of shrimp farms goes on. The threat of inundation and damages certainly is rising when the protecting forest cover is removed, but the river dynamics are directed by the large hinterland including deforestation in Cambodia and Laos (ADPC 2003, Gilmour et al. 2000).

In the interior of the delta plain some brushed like belts are visible without any noteworthy vegetation. These are the belts of defoliation by the dioxin sprayings of the Americans during the second Indochina war. A tradition in American agriculture (defoliation of cotton fields before the harvest) was transferred to the type of ecological warfare. Some 44 mio l of a mixture of dioxins and other herbicides were regularly sprayed over South Vietnam (Remade 1987, Tenenbaum 1997, New Zealand Gov. 1999)

Even after more than 30 years it still remains a threat to the population not only because of the impossibility of cultivation, rather than because of the poisoning of the ground water. A second wave of miscarriages, disabled babies or even monsters is noted in the country explained by the infections of water out of the soil weathering and subsequent release of dioxin derivatives.

D. The chances for further economic development

Economic terms are still ambiguous. 60 percent of the population is younger than 25 years. Still 1/3 of the population lives with less than 1\$ income a day, and the minimum salary for city inhabitants is officially guaranteed to 45\$ a month. Since 1986 the so called Doi Moi decisions of the party and government prepared conditions for foreign investments and by 2000 international trade connections were admitted. Officially there is hope for 12 bn US-\$ investments by the year 2005. One also tries to reduce corruption, which is seen as a major obstacle (interview Prime Minister PHA Van Nen, Der Spiegel 47/02). Also the 6000 state companies are to be revised. However the inflation rate was reduced to about 2,5% by the year 2002 (Der Spiegel 2002).

Substantial progress was achieved from 1986 to 1996. Although annual growth averaged around 9% from 1993 to 1997 there are some major difficulties in economic performance. Many domestic industries, as coal, cement, steel, and paper, have reported large stockpiles of inventory and tough competition from more efficient foreign producers.

The structural weaknesses of the Vietnamese economy became clearly visible during the 1997 Asian financial crisis, nevertheless the government rejected

any idea to shift to a market-oriented economy. As a result GDP growth of 8.5% in 1997 fell to 6% in 1998 and 5% in 1999. Later growth rose to 6% to 7% in 2000 – 2002, which was an amazing achievement with regards to global recession.

Vietnam today tries to develop and present an image for foreign investments (Le Ba Thao 2001). It is well visible throughout the country and in the mayor cities. There is a growing number of industrial parks, and signboards signal the presence of all major global players.

The authorities have moved to implement the structural reforms needed to modernize the economy and to produce more competitive, export-driven industries.

In 2003 the government started to adapt the custom tariffs for more than 10.000 products to the nomenclature of the ASEAN (Association of South East Asian Nations) member states. The task should be accomplished by 2006 and will have major repercussions for the national industry, while the country joins the Asean Free Trade Area (AFTA).

By joining AFTA Vietnam hopes to gain additional advantages for the development of the national economy and to achieve a further integration in the network of global trade. Export related sectors as rice, coffee, rubber, footwear and textiles are expected to benefit most because they can offer their products at cheaper prices to the neighbouring countries.

Foreign investors will understand the implementation of AFTA as proof that Vietnam is honestly pursuing the drive towards further liberalisation and it will pave the way for joining WTO at a later stage.

In reverse, however, AFTA will remove the existing protection from Vietnamese industries and expose them to international competition.

This will be felt in particular by the electronic industry, as there is no local supply of components available. Due to the high prices of imported components, already today local manufactured electronic products are by far more expensive than imported ones. Experts fear that in 2006, when custom tariffs will be reduced from 100% - 60% down to 5% and less, many local manufacturers of electronic products will have to close down their operations. Similar risks do exist for the local paper manufacturing industry which needs desperately to be upgraded to the latest state-of-the-art as even the most modern factories are using 20 years old equipment.

Nevertheless, the government of Vietnam has made substantial progress in promoting economic growth and poverty reduction. The reduction in poverty over the past decade has been one of Vietnam's most striking achievements. The latest data, from the 2002 household surveys, show that between 1993 and 2002, the proportion of the population living in poverty declined from 58 percent to 29 percent. Progress has been consistent across a broad range of indicators. GDP grew at 7 percent over the last year; exports expanded by 22 percent; and the actual inflow of foreign direct investment (FDI) increased by 10 percent.

A number of challenges will be important to address in future years. There is a need to align integration with the world economy and restructuring of the state

enterprise sector. Slow progress in the twin areas of reforming state-owned enterprises and the financial sector are a matter of concern, as well as weak integration of the Public Investment Program into broader medium-term expenditure frameworks linking capital and recurrent expenditures.

The second challenge is the need to tackle growing inequality in living standards and social outcomes through the use of improved targeting instruments and redistributive mechanisms. Related to this is the need for concerted efforts to address ethnic minority poverty and to include unregistered migrants in development activities. (Vietnam: World Bank Reviews Progress Of Country Assistance Strategy, News Release No: 2004/236/EAP)

Tourism shall play as well an important role for the country's development. However these efforts are very vulnerable too. Competition for foreign investment is high among the neighbouring states and in the region and the risk of diseases developing from the intensive mixture of animal breeding in the settlements is high - such as the SARS-epidemic of 2003 did show - with the subsequent psychological and economical effects afterwards. Thus these risks will remain open and hard to judge from a short visit and from statistical information only.

Conclusion

Even a short visit to Vietnam may furnish several insights. First it is obvious that restoring a tropical country after severe destructions during decade long wars is possible and even to manage it in a way that hunger and poverty for the population are reduced. There are as well some immanent risks of intensive exploitation under a monsoon climate, which are known for other tropical regions too. These are deforestation with subsequent soil erosion and stronger inundation turning into damage floods. Their dynamics navigate between an intensive but controlled exploitation combined to a well-managed social organisation and an extensive exploitation on an individual base such as shifting cultivation on already deforested slopes without any anti-erosion measurements. However, hunger leads to subsistence agriculture in less suitable areas, and it is up to the government to find some measurements to cope with these threats. From 1943 to 1993 the forest cover diminished from about 43% to 22% of the states surface Soil erosion at 1994 was estimated to about 120-170 t/ha with a rate of about 1,2 mio ha eroded or denuded surface (Le Ba Thao 2002). The government's decision to ban timber export and to reforest the devastated areas after the end of wars and decades of anarchic wood exploitation was already a first step (Le Ba Thao 2001, Pham Xuan Nam et al. 2001). There are numerous examples of an intensive exploitation of natural resources in a manner, that damage is restricted. However, as the situation in the Red River Delta shows, the intensive exploitation creates a rising vulnerability too - in this case of damage floods caused by the river or by typhoons, invasion of salt water etc. A further enlargement of the dikes will hardly be possible

and management will rely on upstream measurements. These are bound to intensive negotiations with the neighbouring countries. On a national level anti-erosion measurements are necessary. It is obvious that the shifting cultivation on already deforested slopes provokes soil erosion, but road cuts for the development of the infrastructure in the deep soil cover are as dangerous as the anarchic agriculture.

There are as well the legacies of the ecological war, which the country will not be able to cope with totally. Most of the necessary measurements of after-war rehabilitation are done, such as de-mining, assistance to victims and reintegration of the militaries into the civil society. However, long lasting traumata can only be estimated. Sometime novels from the countries concerned may inform on these heritages as the reminder of civil or international wars, of a corrupt military regime and the suppression of civil rights (see Bao Ninh 1991, Saro Wiwa 1985, Soyinka 1965). All these authors suffered from suppression or even murder as in the case of Saro Wiwa.

Observations in the country confirm the state, that the diminishing of hunger and poorness was successful (Turner 2003). This already is a huge effort compared to the situation of Nigeria, where hunger and poorness are still persisting. The physical infrastructure also got more or less restored after devastations of wars and the socialist economy. These short observations certainly have their limits; however it is visible that both a restoration as a management in order to diminish poorness and to enlarge an infrastructure is possible. Vietnam by now is an example of a country, which is exposed to the ordinary risks in a way that there is not any buffer left. There is no empty space in the river plains to absorb excessive water for example. So to protect the population and investments against the mayor risks such as severe soil erosion, devastations by typhoons or damage floods will be a severe and complicated task for the government.

There are demonstrations of good will and declarations from the government via the UN and their sub-organisations, announcing a lot of anti-erosion and anti-degradation measurements in accordance and in cooperation with the population concerned (see Socialist Rep. of Vietnam 2002) however for some of them – such as river control - Vietnam is no longer autonomous, since deltas and lower reaches of the rivers are largely controlled by neighbouring countries. However in the field of soil erosion-afforestation Vietnam may act independently.

Coming back to the “african eye”, the case of Vietnam gives hope to restore devastated and ill managed tropical countries even under severe conditions in a reasonable time. However, natural resources must be exploited within certain limits, in order to avoid further damages.

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