

AN OVERVIEW: THE SCOPE OF THE DRY AREAS STUDY

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Browsing through archaeologists' and historians' writings on Southeast Asia, we see the succession of rise and decline of numerous polities, and one may notice that the earlier they were formed they tend to have been in the relatively drier areas, while the more recent in the wetter areas. Then, the first question to be asked is whether the above can be justified or not. If the answer is yes, the second question would be whether it is intellectually and academically worthwhile to make an inquiry into a reason or reasons for why. If the answer is yes again, the third is what would be the appropriate research agenda and strategies. And finally to what kinds of contemporary problems the results of such inquiries would be able to address should also be questioned.

The first question must be answered by archaeologists and historians rather than an ex-agricultural scientist. My answers to the second and the last questions have been stated in the program of this workshop. In this overview, I try to answer the third; that is, the appropriate research agenda and strategies.

I. Some of the conceptual problems: the *core areas* and their *shift*

Since our primary concern is essentially geographical, the location of the polities must be identified first. Perhaps except for the case of the boundary separating Dai-Viet and China, there was few polities in Southeast Asia with the

clearly demarcated territorial boundary until the 19th century. Therefore, the geographical location of the polities must be identified by the location of their core areas.

Archaeological and historical evidences often tell us the location of a primal city of a polity, which in many cases can be taken as the center of core area. But this is not always the case. The pre-Angkorean lower Mekong basin, for example, was a sphere without any city of permanence, where relatively small and transitory realms represented the personal achievements of particular individuals rather than institutionalized political systems. The similar situation prevailed in Java in the 8th and 9th centuries. It might become doubtful to call even Palembang-Srivijaya a core area because it only represented a pyramidal network of loyalties among Malay rulers.

The cities identified by archaeologists and historians sometimes appear to represent political and religious centers but not necessarily demographic and economic ones. Examples for the case include Pagan and Hue. There was a time lag of nearly a century between the foundation of Thonburi/Bangkok, and reclamation of its environs for rice-growing. Similarly, too much emphasis on the port cities in insular Southeast Asia as the core areas may mislead us to neglect the economic and demographic significance of the hinterlands connected by rivers with them.

Identification of the core areas becomes more complex depending on the scale by which one tries to identify them. At the macro-scale covering the whole Southeast Asia, for example, the today's metropolises and their environs can be identified as the core areas of the 20th century. At the meso-scale, major cities within the sphere commanded by one of these metropolises may be identified as the secondary core areas. At the micro-scale, every provincial and district towns or even larger villages also form the core areas in the respective vicinities. We should not neglect these secondary and tertiary core areas since they also experienced rise and decline of their own in the past, and the dynamism having effected it may reflect the complex relation between the hydrological, if not climatic, condition and the fate of these core areas.

We often encounter such cases in that decline of a core area is immediately

followed by the rise of another. When any causal relationship is plausible between them, the two are located within the geographical proximity, and the major ethnic composition is similar, if not exactly same, between the two with or without mass migration, we might be able to call those cases the *shift* of the core area. Thus, we can say that the core area within the Irrawaddy basin *shifted* from Upper to Lower Burma, in Java from south-central Mataram eastward, in the Chao Phraya basin from Ayutthaya to Thonburi-Bangkok, and so on. In other cases, however, the decline of one and the rise of another may be economically linked but they are far away, and ethnically and politically not linked; e.g., the decline of Fu-nan and the rise of the Strait polities. In such cases, *shifting* may not be an appropriate terminology. But it still remains that a parallel inquiry into a common element having operated in the opposite direction in the two societies, the trade route in this case, appears to be more fruitful than investigating the two in complete separateness.

II. Agenda and strategies

The arguments on the rise and fall, and the shift of the core areas in Southeast Asia most often center around a specific theme; that is, rice production vs. external trade. Change in the relative importance of agriculture and commerce is supposed to have been a major factor having governed the fate of the core areas. Rice productivity is assumed to be higher in inland drier areas, and, hence, the agriculture-oriented polities were formed there. With increasing opportunities of accumulating wealth by the maritime trade, however, the trade-oriented polities sprung up along the trade routes. Since the major trade routes pass through wetter areas except for central Vietnam, and the relative importance of trade over agriculture ever increased, the apparent shift of the core areas from the drier to wetter areas resulted.

I believe that the above proposition can serve as an appropriate point of departure for our inquiry. However, we, at the same time, should not neglect the cases of the shift of the opposite direction, that is, from the wetter to drier areas, and

non-shift. A good example of the latter is the Red River delta. Thang-long or Hanoi remained as the center of the polity for at least ten centuries. Inquiries into these cases would give us valuable insights.

Below, I list up some points and arguments which appear to be relevant to our inquiry in view of the above-mentioned point of departure. Many of them are simply a sort of *it-is-said-thats*. Some may be founded on the hard evidences while others merely speculative opinions. I wish that they be a help for us to direct this project.

2.1. The trichotomy of geography of Southeast Asia

Most historians working on Southeast Asia appear to conceive that the region, especially the mainland, consists of highlands and lowlands, and this configuration correlates with the anthropological division of the societies into the coastal/riverine civilizations of the lowlands and the inland/upland *hill peoples*. This highland and lowland dichotomy is so firmly accepted that a historian described the Khorat Plateau as *the broad and fertile floodplains*, and south-central Java with somewhat geomorphologically unclear wording such as *upland plains, valleys, and plateaux*. However, the environs of Tonle Sap, the Khorat Plateau, Upper Burma, the inland of Java, where the core areas of the early rice-oriented polities were located are neither lowland nor highland. In place of the geographical and anthropological dichotomy, a trichotomy of the high-, middle-, and low-land appears to be more appropriate. Description, characterization of the middle lands, and their evaluation in terms of rice cultivation and other human activities are acutely needed.

2.2. Rice production

One of the most relevant questions to be asked at outset may be whether the dryness was really advantageous for rice in the past as claimed by many historians. Seeing that the today's rice bowls are mostly located in the wetter coastal plains, and the rice cultivation in the core areas in the middle lands is most vulnerable to drought, relevancy of this question is evident.

Increasing number of political economists working on peasant societies in developing countries acknowledge the priority of minimum risk over maximum

production. If this preposition can also be applied to the behavior of a society, the relative advantage and disadvantage of the drier inland and the wetter coastal plains must be evaluated in terms of certainty rather than the average level of productivity. Was the easiness of water control in the smaller basins in the inland more advantageous than the greater potential of production in the larger plains where water control had been beyond human ability before the 19th century?

Average annual temperature was 2 - 4 degrees Celsius warmer than now over much of China between 6000 and 2000 BC. Though little is known what was the climatic regime in Southeast Asia in the comparable period, some speculate that it might have rained more. If so, the dry areas in Southeast Asia would not have been so dry then as now, and the period of the decline of the core areas there coincides with that of the ever increasing dryness.

The inquiry into the probable advantage of the drier inland invite another inquiry into the probable disadvantage of the wetter coasts. Apart from a large investment needed for reclamation, the disadvantage of the latter may be related with the higher sea level in the past. The most recent peak of the sea level occurred at only 6000 years ago. At the time when the rice-based societies were first formed in the inland, the coastal plains might have still been under the half-sea. Therefore, the period of shift of the core areas from the inland to the coasts coincided with the period of the ever increasing dryness in the former as well as the ever receding sea level in the latter.

Many people assume the two contrasting modes of rice cultivation; intensive and extensive. The former is irrigated, the plant being transplanted, higher yielding, and more surplus-producing, while the latter unirrigated, the seed being broadcast, lower yielding, and with little surplus. The former is typified by sawah-rice in inland Java while the latter floating rice in the deltas. Ishii called the former the *engineering adaptation* and the latter *agronomic adaptation* of rice farming. The reality, however, is more complicated.

Tidal irrigation is recorded by the Han Chinese in the Red River delta, and presently widely used along the Sumatran coast. Rice is irrigated and intensively cared but not transplanted in the dry zone of Sri Lanka. The average yield per unit

area in the deltas was much lower than the inland valleys in the late 19th to 20th century, though the former produced most of export rice. This case tell us that it is not true that intensive cultivation alone would produce surplus. Whether irrigation water depends on reservoirs or the run-of-the-rivers determines not only productivity and yearly variability but also social organization.

So far, the earliest archaeological evidence of rice cultivation is found in the lower Yangze River. The rice cultivation there is described as the most primitive and extensive in the Han-period documents; *cultivation with fire and weeding with water* (火耕水耨). Less than 1000 years later, the area became a rice-bowl of the whole China. Certain technological progresses must have taken place during the 1000 years, which is yet to be investigated. A similar development of lowland rice cultivation might have taken place in Southeast Asia. In this connection, Watabe's discovery may be relevant. He showed that the slender-shaped varieties first appeared along the coast of mainland Southeast Asia and propagated toward inland replacing the small- or round-shaped ones. But it is not known whether this varietal change accompanied any significant change in the cultivation method and productivity.

We should not equate the rice cultivation a few decades ago with that in ancient times. For instance, rice cultivation in the Khorat Plateau in the Bang Chiang, the Dvaravati or even the Khmer period might not be rain-fed because the rain-fed rice there is possibly a rather recent phenomenon developed by the Lao immigrants since the 18th century. In the dry zone of Sri Lanka of which the climatic and topographic condition is quite similar to the Khorat Plateau, the combination of the tank-irrigated intensive rice cultivation and the shifting cultivation, *chena*, is the dominant form of landuse; rain-fed rice being little known.

Nearly totally lacking in the discussions on rice technology is the middle lands. So far, only two models of environment-technology complex have been advanced; the intensive and irrigated in inland valleys, and the extensive in naturally inundated lowlands. The rice cultivation in the middle land may belong neither of them. Like in the case of geography, a trichotomy framework appears to be adequate for rice cultivation, too.

2.3. Non-rice early economy other than the external trade

It is said that the transition from hunting-gathering to systematic agricultural economy was rather abrupt in Southeast Asia; for example, the Khorat Plateau was almost totally devoid of any preceding settlement by foragers. Furthermore, there are not enough evidences to support the existence of an early and indigenous stratum of agriculture in Southeast Asia based purely on fruits and tubers west of New Guinea. In Java, millet, or dry rice might have predated wet-rice as the staple grain as Ptolemy's reference to Yavadvipa or *millet island* implies. But, it is rice which has yielded the bulk of the positive archaeological records for ancient agriculture in Southeast Asia. Many believe that the shifting cultivation in the hilly areas may be a secondary development.

Can what were stated in the preceding paragraph be taken for granted? Can we assume the staple food of every core area we would deal with was wet-rice alone?

Even assuming the dominance of rice as food, other produces might played some significant economic role. Before the rural areas of Southeast Asia were submerged under the consumer goods produced by modern industry, there must have been the local industries. Among the items supposedly traded over the boundaries of the core areas, if not outside of the region, we know the examples of salt and iron in the Khorat Plateau. Another example may be cotton. Since cotton is a dry area product, its economic role may be able to reveal the economic basis of the dry land polities other than rice.

Rice cultivation is environmentally friendly since only low-lying depressions were used, but the non-rice industries might have induced deterioration of land resource; e.g., fuel wood extraction for salt and iron industries. Cotton was most probably cultivated by the slash-and-burn method. There appears to be the possibility that these activities enhanced dryness of the dry areas. To what extent such caused the decline of them is an open question.

2.4. Water works

It is widely believed that water works are essential in the dry areas, and the

construction of them is intimately related with the organizational ability of polities. Some even opine that the decline of the dry area polities is primarily caused by their failure in maintaining water works. However, there are others who are in the opinion that the hydraulic nature of the polities in Southeast Asia is not so significant as seen in the arid regions elsewhere and advocated by Wittfögel.

In any case, we have to distinguish the purposes and functions of water works; whether for irrigation, domestic water, religion, sanitation, and so on; e.g., the moat and the Khmer *barai* in Northeast Thailand and Northwest Cambodia. The distinction of the mode is similarly important as mentioned earlier; the reservoir or the barrage system.

The types of water works very much depend on the climatic and topographic conditions, and the resultant ground water. As stated previously, however, landform of the middle land has been little studied. The double planation theory of Büdel, if proved to be applicable to at least some of the dry areas in Southeast Asia, might shed light on hydrography of the middle lands.

2.5. Population and hygiene

Since Southeast Asia is known to have been very sparsely populated until the 18th century, it might be rather hard to imagine any significant impact of population pressure on the shift of the core areas. But the possibility may not be nil in some densely populated areas; e.g., some believe that population increase is at least partially responsible for the eastward shift of the core area from south-central Java in the 10th century.

At the preparatory gathering for the present workshop held in June, 1996, Nakamura put forward a preposition that the *over-development* of the stored irrigation in the dry zone of Sri Lanka is responsible for the collapse of the Sinhalese civilization there. In the Khorat Plateau, the reclamation of inferior lands to cope with increasing population as well as forest exploitation for the salt and iron industries might have caused the deterioration of resource base, which eventually resulted in the decline of the area. Thus, many participants thought that the dry area environment might be benign under a low population density, but so

fragile that it deteriorates quickly when population and/or resource exploitation exceed a certain limit.

Perhaps, population concentration in a limited expanse of land rather than the absolute number of people in a wide sphere might have facilitated a more solid and governable society. A society whose economic base is rice production is characterized by high concentration of population because land is normally not left fallow and the land productivity is high. It is also said that rice agriculture can better respond to incremental labor input than other types of agriculture. In rice-based societies, rural-urban distinction may not be so clear as the von Thunen's model suggests. A polity with no city of paramount significance may be possible in the Asian rice zone.

In Southeast Asia, population rather than land was once the most important source of wealth and power. If it is true that many of the early polities were rice-oriented and located in the drier inland, the rice cultivation there must have offered a better opportunity for population concentration. Then, a question to be asked is whether the better opportunity means better nourishment or better hygiene.

In the non rice-growing part of the world, alluvial plains are largely only sparsely populated, while in the rice-growing Asia, on the contrary, alluvial plains are most densely populated today. French geographers working in Vietnam before WWII thought that this was because of eradication of malaria by land reclamation for lowland rice. If the eradication is easier in inland valleys with limited areal expanse of paddyland than the vast lowlands, the hygienic explanation for the earlier concentration of population in the inland drier lands may be plausible.

In Vietnam, it was also observed that making fire and smoking under the floor of stilt houses of the hill peoples was effective to repel mosquitoes, and the higher contraction of malaria by immigrant Vietnamese into mountainous areas was due to their grounded houses. Can the same be said about the Javanese who transmigrated to the outer islands? In anyway, it is interesting to note that two of the earliest opened, most intensively cultivated, and most densely populated areas of Southeast Asia are settled by those who live in grounded houses.

Some explain the decline of civilizations in Angkor, Sri Lanka, and the Yukatan Peninsula as well by population decrease or dispersal due to the spread of

diseases for which the deterioration of water works is responsible.

In the Khorat Plateau, there are many small man-made mounds of a few meters higher than the surrounding paddyland, some still being used for village compound with or without moat. In most cases, they are not in the middle of a vast plain but only a few hundred meters away from the nearest natural and much larger raised ground covered with woods. Therefore, escape from flooding does not appear to be a good explanation. This landscape remind me the southernmost islands of the Ryukyu archipelago. The islands consist of two types; larger islands with mountains, valleys, and coastal plains though small but suitable for rice fields, and smaller flat-topped coral islands with no rice fields. Since the former was infested with malaria until a few decades ago, people resided on the coral islands and commuted to the larger ones for rice cultivation. The man-made mounds in the Khorat Plateau might be for avoiding malaria.

Regardless of landuse, the areas of the great seasonality in rainfall may be more hygienic than those without the distinct dry season.

2.6. The early entrepots

Initially, little local products were involved in the maritime trade passing through Southeast Asia. A trade-oriented polity was possible only along the trade route then. The earliest known entrepot, Fu-nan, is along the route which crossed the Kra isthmus. During the period from the 4 to 6th century, however, the route shifted to the one through the Strait of Melaka as the Malays responded to opportunities for direct maritime trade. The Malay sailors skipped Fu-nan and, instead, made a stop at the Malay entrepot on the Vietnamese east coast on the way to China. Thus, the decline of Fu-nan and the rise of Lin-yi/Champa are often related with this shift of trade route. And in the following centuries, more powerful leaders along the Mekong a little upstream became to be oriented toward the inland rice-growing areas, and this trend culminated in Angkor in the 9th century. Thus, even the rise of Angkor is indirectly related with the change of trade route.

The trade route from China to Southeast Asia is said to have had been a detouring route all the way along the coast, but shifted to one directly connecting

southern China to central Vietnam. The shift effected the reduced incentive for China to retain their outpost in the Red River delta, and the increased incentive for Vietnamese to expand southward.

The change, and opening or closure of the routes outside of the region also affected the Southeast Asian trade. For instance, the increased opportunities of trade with southern China is related with the closure of the overland Silk Road in 439 A.D. Whether passing through the Persian Gulf or the Red Sea, opening of the direct route to Indian Ocean around the tip of Africa, the Mexico-Manila route, and the route through the Suez canal, and so on certainly affected the trade in the region. To them, the restricted trade at Nagasaki, and the concomitant significance of Ryukyu might have to be added. These changes of trade route must be re-examined in terms of their impacts upon the dynamism between the polities in the drier and wetter areas.

No sooner than the Malays participated in the international trade, they substituted local products for established items of trade; e.g., Sumatran pine resins for frankincense, and benzoin or benjamin gum for bdellium myrrh. They also introduced their own unique products: camphor (from Barus, NW coast of Sumatra), gharuwood and sandalwood (Timor), spices (cloves from Maluku), rhinoceros horn, kingfish, bird feathers and so on. By the late fifth or early sixth century, Chinese consumers were well acquainted with pepper and other spices. Are these products unique in the tropical rainforest, and not available in the monsoon forest? Is apparently later participation of Pegu and Ayutthaya in the trade related with availability of local products to be traded? The southern expansion of Vietnam to Champa is said to obtain forest products from the hinterland of Champa and southern Laos rather than to control the entrepots themselves. The kind of *suei*, a sort of tax by kind, demanded by Bangkok from the Khorat Plateau in the 18th and 19th centuries changed according to the demand over-sea, especially of China.

With growth in trade, any power that could dominate the trade route stood to benefit enormously from the commerce that passed through. Consequently, the entrepots competed each other for dominance. Access to the Java Sea by the pre-Majapahit polities on Java placed them in conflict with the maritime trading polity

of Srivijaya in the 11th century. In the late 14th century, Majapahit rapidly declined in importance, torn by warfare between rival lords and challenged by the rise of Melaka. It was replaced by Muslim polities on the north coast of Java. Even the powers from outside of Southeast Asia were involved in this competition; the assaults of Sumatra by Cola of India, and of Lower Burma by Sri Lankan, for examples. The expansion of Chinese shipping during the 12th century greatly reduced the importance of Malay shipping, and dispersed authority in the Malay world. From the 16th century on, Europeans also joined.

Thus, the rise and decline of the port polities were related with external factors such as the trade route, the remote markets, and the engagement of the outside rivals on the one hand, and, on the other, internal factors such as the availability of local products, and their military, political, and organizational prowess. These must be re-examined on their possible impacts on the inland core areas. Besides, the self-sufficiency in rice may have to be added as another internal factor.

Because of the seasonally alternating wind direction, the Southeast Asian ports often had to feed the travellers for months. It is said that it was this reality that a port's access to agricultural surplus was one of the most important variables in its success. What distinguished Fu-nan's site from a number of other small coastal enclaves around the Gulf of Thailand was its agricultural productivity. One of the reasons for the success of Palembang-Srivijaya over the other Sumatran coastal rivals might be rice supplied from the relatively large riverine plain along the Musi River, though it had to rely on import from Java later.

The rice-oriented polities became gradually involved in the trade. In the case of the return of the Khmer from Angkor to the Mekong plain, the attraction of the new site more accessible to seaborne foreign merchants appears to have been at least as important as the distraction of the old site vulnerable to Ayutthaya. One result of Anawratha's activities in lower Burma and the peninsula was to bring Pagan into the maritime trading network. At its inception, Ayutthaya was fighting to appropriate the claim to regional overlordship that had been held by Angkor. It would be only sixty years before the logic of Ayutthaya's advantage as an entrepot would lead to the abandonment of Angkor.

In view of the importance of rice for the coastal entrepots mentioned earlier, it might not be too speculative to assert an inherent advantage of the formerly rice-oriented polities when engaged in trade. Some argues that the shift of the core area from south-central Java, which is drained by rivers flowing to the Indian Ocean, to east Java was motivated by the latter's access to the Java Sea by the Solo and Brantas Rivers. The strategic position of the ports on the northern coast of Java is vital for the spice trade starting from Maluku to the west. But a large amount of rice from the inland was also exported through these ports to the whole Indonesian archipelago.

2.7. Ethnicity, war, and migration

As far as the core areas at the macro-level are concerned, ethnicity appears to have mattered in the fate of them mainly in the mainland. The Irrawaddy basin had been inhabited by the Phylus and Mons long before the arrival of the Burmans. They shared a single lowland geo-strategic site. The mood was more culturally diverse and competitive, and the need to affirm the ethical nature of political authority was accordingly greater. It is pointed that the ethnic conflict should probably be placed beside the problem of land control in analysing Pagan's collapse. They were also vulnerable to mountain-based powers. It is said that most significant of the Anawratha conquest between 1044 and 1077 was the impact of Mon culture upon the Burmans. Could the Mon cultural influence be related with reorientation of Pagan toward the foreign trade?

The history of Angkor and Pagan came to an end contemporaneously with the advent of Tai peoples into lowland Southeast Asia. But the relationship between the two must be studied from various aspects as mentioned previously.

Though the apparently obsolete domino theory triggered by the Mongols might not be plausible, it appears that the Mongol assault effected increased significance of military strength; e.g., Kertarajasa of Majapahit, and the Shans of Ava.

2.8. The colonial economy

Until the 18th or 19th century, the European traders had little commodities

originated from their mother land to sell in Southeast Asia and China. They had to procure tradable commodities within the region; having essentially be mercantilists. Their primary concern was the control of entrepots such as Melaka, Batavia, Singapore and so on, and monopolizing the trade. For more efficient and assured supply of the commodities, however, they turned to the territorial control.

The major commodities of which production was promoted in the newly acquired territory by the European power include coffee, pepper, sugar, tin, fiber, palm oil, rubber, and rice. Of them, sugarcane is only item suited to the dry areas. Rice which was once considered to be suited to the dry areas became to be planted in the vast deltas and coastal plains which are much wetter hydrologically, if not climatically. Since the major concern of the colonial powers was the export of these commodities, they preferred to locate their centers of colonial government in port cities. Thus, some of the existing entrepots were much enlarged and strengthened or the formerly insignificant harbors were made the capital. The primary-products-exporting-economy set in everywhere in Southeast Asia centering around these colonial cities. Under this structure, the old inland dry areas faded away, typifying the negative, at least economically, side of the dual economy and the dual society.

2.9. Economic development, industrialization and urbanization

The free market economies in Southeast Asia have experienced rapid growth of economy since the late 1950s. First, the primary-products-export-economy, a legacy of the colonial economy, was much strengthened and enlarged. Second, the import-substituting industrialization proceeded at a slow but steady rate, and it rather abruptly changed to one oriented to export in the 1980s. The population also grew in parallel, hitting around three percent per annum during the 1960s and 1970s, but the fertility began to show a sign of decline in many countries during the 1970s. In the 1980s, the rate of increase of population became much lower. It can be said that the demographic transition has been or is being observed.

Only a few new primary commodities were added during the course of the post-WWII development. Exploitation of petroleum is a highly capital intensive venture but not labor intensive. It can easily transported to ports by pipe. Wherever

located, it created no core area around its immediate environs. During the course of industrialization in the 18th and 19th century elsewhere, industrial areas were centered around coal mines. In the age of petroleum, the source of energy is little related with the location of industries.

A new agricultural commodity in the world trade is animal feeds. Only a few countries in the tropics have succeeded in availing oneself of this opportunity. In Southeast Asia, it was Thailand. A huge area of forest was reclaimed for growing maize, sorghum and cassava to be exported, the earning by which contributed to capital accumulation for her industrialization. Since these crops are able to be grown under or even better suited to the dry climate, the Khorat Plateau also benefited from cultivation of them. One of the reasons for the failure of a maize project in south Sumatra was its too wet climate. The feed crop production offered an opportunity of cash income for largely subsistence rice farmers in the dry areas , and brought about a little boom of local cities in the major production areas of Thailand. But it did not create another Chicago.

Provided that a good infrastructure exists, modern industries are less location-specific. Industrialists may choose the location according to the production elements, that is, the cost of labor and land. Access to a deep-sea port may matter, but a good transportation system would help solve this problem. Therefore, the dry areas do not necessarily appear to be disadvantageous in the industrial age. Actually, however, industries in Southeast Asia are most concentrated around the colonial cities of the former days irrespective of the governments' apparent appeals of decentralization.

The former colonial cities with population in the order of one million grew to the megalopolises with population in the order of ten million. Apparently the economy of scale is working; infrastructure building is most economically achieved by concentrating in a single location. To this economic explanation for the corpulence, some political and cultural ones could be added since the present megalopolises inherited, enlarged and modified not only their infrastructure but also political, cultural, and symbolic legacies of the colonial capitals. Since the days of colonialism, the capital cities have been the place where a close, complicated, and

often corrupt connection between politics and economics was conspired. To the colonists as well as the elite, many of whom are descendants of immigrants, the outside of the capital has until recently been *hinterland*. The capital city was a symbol of consolidation, if not unification, of the colonial state, and exactly the same symbolic meaning was inherited by the government after independence.

2.10. The future

It may not be too early to think about the possible implications of this project on development of the dry areas, not necessarily for appealing to potential fund donors but for avoiding getting into a pedantic or self-indulging labyrinth.

First of all, resurrection of the rice-oriented core areas, if not polities, in the dry areas is unlikely, primarily because the environment there appears to be benign for rice production when only most favorable parts are utilized for it. The expansion of rice fields into the inferior lands during the last few decades was caused by the population pressure coupled with the then poor transportation facility for migration to the industrialized core areas.

The feed crops cultivation for export may be possible in Upper Burma and parts of the eastern islands of Indonesia provided that transportation means and marketing system is sufficiently efficient. Presently in the Khorat Plateau, cultivation of horticultural crops and chicken farming, both in the form of contract farming, are becoming popular. These ventures can make use of cheap labor and land, one of the few advantages of the dry areas. They also represent a new mode of production in the tropics in which land and labor are rendered by peasants while capital, technology and marketing by agro-businesses. It is neither purely peasant nor estate agriculture. It may somehow resemble the sugarcane plantation in Java under the colonial rule, but the profit is not transferred to Amsterdam but remain in the country, if not in the hand of peasants. But as seen in the Khorat Plateau, agricultural development alone would not bring about resurgence of the dry areas.

It is difficult but may not totally be impossible to imagine that agriculture becomes a central driving force to push up the dry areas back to the ancient glory. Such may become possible if, and perhaps only if, a completely new crop specifically

suited to the dry areas is found. Such actually happened in the wetter areas of Southeast Asia; that is, spices of Maluku, coffee, oil palm and rubber of Malaya and Sumatra, and rice in the deltas. It is known that the botanical gardens at Singapore and Bogor played an important role at that time. So far, I know only one botanical garden in the dry areas of Southeast Asia; Maymyo in Upper Burma.

What was stated in the preceding paragraphs does not necessarily mean that we can neglect agriculture in the dry areas. A realistic strategy for the dry areas may be the combination of agriculture and industry. The seasonal migration of farmers to towns is a type of such combination, but it is far from ideal. Engagement in both farming and industry-commerce-tourism by a farm household, not necessarily by each household member, while residing in villages appears to be more sound in many respects; for family life, environment, aesthetic value, etc. Fortunately in the rice-growing Asia, the density of rural population is much higher than the field crop-growing part of the world. This would make this strategy more feasible. For the sound combination, however, economically strong agriculture is a prerequisite.

The megalopolises will continue to grow, and when they pass a certain threshold, the cost of infrastructure building, ever inflating labor cost, and deterioration of the living condition would eventually become unbearable. The deregulation policy would give entrepreneurs greater choice of the location of their businesses. Infrastructure in rural areas would be improved year after year. These changes in economic factors would encourage the decentralization of industries. But the shift of the capitals may be of a more political and cultural matter than economic.

The fate of the dry areas depends also on the cognizance of them by decision-makers and townspeople in general. In many cases in Southeast Asia, the dry areas may be regarded as the mother land; e.g., Upper Burma for Rangoon residents, Yogyakarta for Javanese, and the dry zone of Sri Lanka for the Sinhalese. To them, development of the dry areas might not simply be for solving the problem of income disparity. Whether and to what extent such notion would have a practical meaning is beyond my imagination. In the case of Thailand, the mother land for Bangkokians

may be more in the northern basins including perhaps Yunnan and Assam than the Khorat Plateau. The Isaan people (the northeasterners) are normally somehow looked down, and the region is seen as poverty-stricken (which may be true) due to the harsh environment (which may not be true).

Today, the idea of an economic sphere encompassing several regions of the neighboring countries is heard. Since the regions included are often economically peripheral in the respective countries, this strategy can be seen as a new approach to rural development.

Before the establishment of colonial capitals, the core areas were much dispersed and each enjoyed a higher degree of autonomy. In the process of territorial integration of colonial states, the political and economic power was centralized at their capitals. The centralization might have been needed for the nation building after the independence, too. But, it seems that the nation-building of the countries of Southeast Asia has reached maturity so that they became to afford the cross-border economic sphere. Success of the strategy would ironically prove a negative effect of the centralization since the colonial period.