Committee III
Human Beings and the Urban Environment:
The Future Metropolis

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THE ASIAN METROPOLIS

by

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"THE ASIAN METROPOLIS"

Other contributions in this publication specify the worldwide phenomena of rapid urbanization, the formation of metropolis and megalopolis. This paper shall endeavour to highlight specific characteristics of the urbanization process in Asia, a process which has generally, with the exception of Japan, only started after World War II. The phenomena is recent in nature but because of the large and fast growing population, it is expected that urban population will outgrow the entire urban population of all other continents.

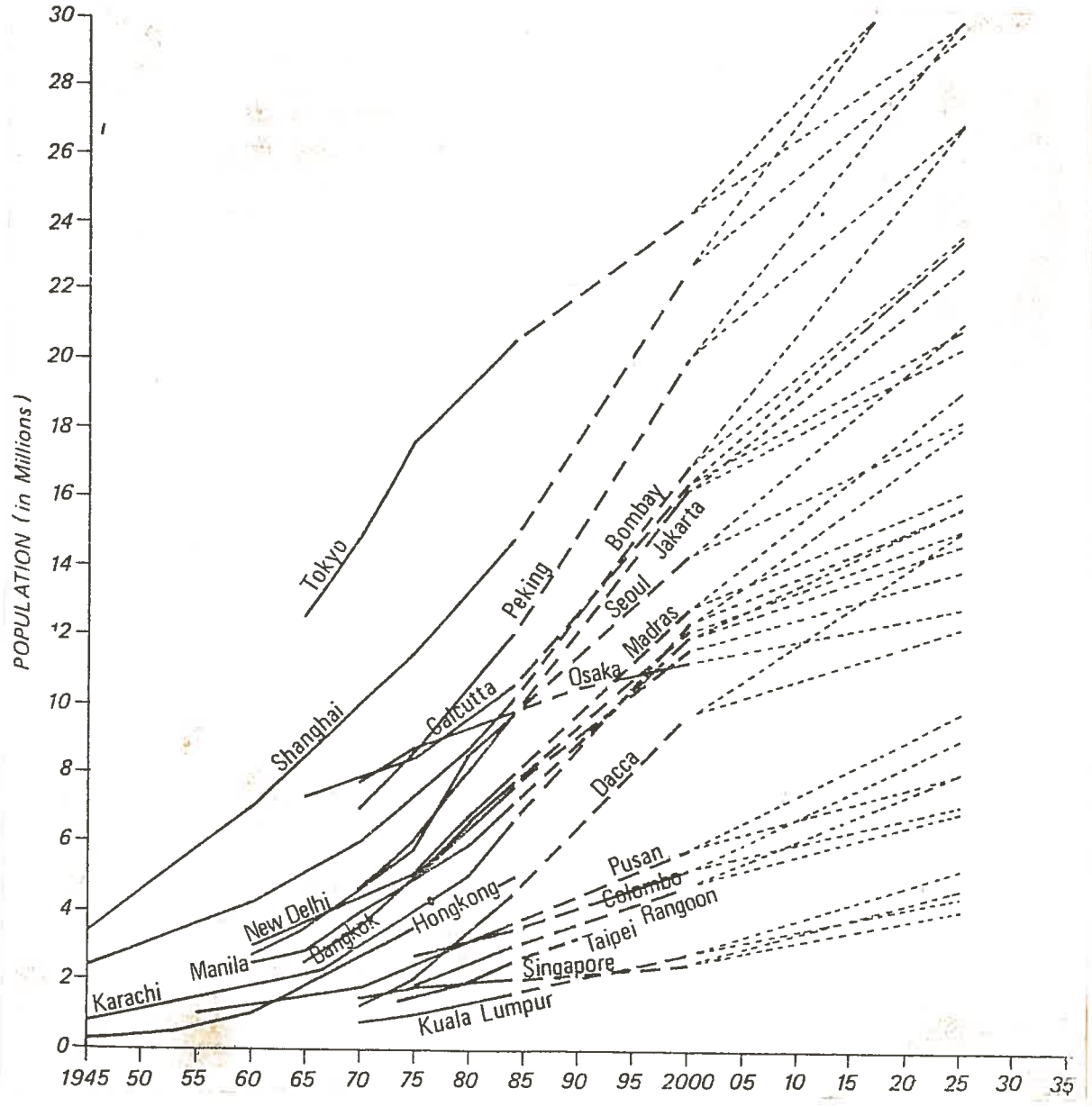

Fig. 1: The emergence of numerous metropolis' in Asia after World War II: a new phenomena in the largest continent before a background of fast population growth and high rural-urban migration.

By the end of World War II, there were only a few cities (such as Tokyo, Calcutta, Bombay and Shanghai) which had a population of more than one million. Meanwhile, many cities have been added to the "Club" of multi-million cities and are further growing at rates of 5% to 7% p.a. and if the trend continues, more than 15 metropolis' in Asia will contain over 10 million people by the end of the century. By the year 2020 or 2030, some of those metropolitan areas will contain between 20 and 30 (or more) million people.

In the past, many suggestions, policies and strategies have been mapped out such as to contain cities to smaller sizes, to decentralize their activities and to intercept migrants in reception centers long before they reach the urban area. But there is no doubt, that cities have stubbornly continued to grow and the question arises -

Why do cities not listen to optimal size theories?

Throughout history, there has been an awareness that there must be a right size for human settlements. Suggestions for optimal city size have been put forward throughout history and it is interesting to note that the optimal city population has been constantly adjusted (upwards - of course): from 10,000 people in 1850, the suggested size has reached the one million mark recently and a special allowance for developing countries has already been made.

As mentioned above, in Asia alone, more than 20 cities have today passed the one million mark and range from 1 to 16 million inhabitants. Thus, they have surpassed the suggested optimal city size by far and somehow do not seem to listen to those theories. It is widely agreed that large cities are more costly both to the individual as well as the public, that crime and deviant behaviour and human segregation are increasing as the cities grow and many suggestions and even policy decisions have been made/taken to restrict the growth of metropolis, in vain.

There are many reasons/factors which seem to be stronger than the theories and policy decisions. For example, if one looks at the appalling conditions of congested, flooded and filthy urban squatter settlements, one could expect those tenants to migrate back to their original rural areas. But this has not been the case. Advantages of the city, whether expected or real, keep the migrants in the city.

Thus, it is not surprising that approaches to large urban settlements have turned from "negative" to moderately "positive". It indicates, among others, that human nature is adaptable to new phenomena over the course of time and, above all, that values are subject to change as we go along.

Whilst the 60's experienced strong contradictory views between supporters of rural versus urban development, the 70's discovered that 'rural' and 'urban' cannot be viewed in isolation but rather form mutually supportive systems. This trend towards "acceptance" of what used to be "outcry" is expected to continue and many subjects which alarmed earlier Congresses can today be viewed with a more relaxed attitude, partly because appropriate measures have been taken and partly because value-judgments have been adapted. The "optimum-size" discussion can serve as a meaningful example to this effect.

Thus, it is not surprising that fast urban growth is today widely accepted as the unavoidable scenario and studies by Gotmann, Ecistics and others point to a "positive approach" to large human settlements.

The rapid change in approaches also point to the undoubted backward urban theories. Compared to other sciences, the knowledge of the complex behaviour of the urban system is far behind and more efforts should be undertaken to advance the 'Urban Theory' since predictions point to the urban scene as the predominant feature of the coming decades.

We cannot speak about the Asian metropolis without pointing quickly to the two major factors for population growth: natural increase and migration. In contrast to the low birth rates experienced in industrial cities in Europe and North America, in the Asian metropolis, natural growth is extremely high with rates of between 1.5 to 3% p.a. And what is equally important, natural growth in urban areas is practically as high as it is in rural areas. Although population control is a subject by itself and cannot be discussed in this context, one should not entirely rule out that natural growth could slow down in metropolitan regions in Asia due to education, higher social status, higher cost of living. But to what extent it would affect lower incomes (which constitute the majority of the population) is quite open.

Migration, on the other hand, contributes 2-1/2% to 5% to the urban growth and continued disparity between rural and urban area is likely to keep migration high. Various measures have been tried out to reduce migration. To mention only two:

- Reduction or decentralization of industries: apart from other unwanted side effects, no direct reduction on migration has been experienced partly because migration in the Asian city is, to a lesser degree, connected to industrialization than this was the case in Europe and North America. This fact points, among others, to the difficulty of transferring experience gained in industrial cities to developing cities.

- intercept migrants in reception centers away from the urban area: such proposals ignore the strong relationship between successive migrants who draw-in relatives and friends of their own clan and/or village community. They help each other into jobs and support newcomers for as long as they have not found employment yet. This not only builds up a strong cohesion between members of the same clan and/or ethnical groups within the urban area but it also increases the interdependence between metropolitan area and the provincial place of origin; the province

acts as a supplier of labor force (majority of migrants are between 20 and 40 years of age), whereas the city offers higher incomes, allowing migrants to send savings back to their place of origin. Thus, the province gains indirectly through the urban migrants and reinforces the 'urban-rural' interdependence.

THE LOSS OF BORDERS

Cities throughout history have always been closed-off from their rural surroundings by defense works. This state changed drastically during the 19th century, where technological improvements of weaponry rendered such defense works useless: borders collapsed and cities opened towards their hinterland. Industrial development, the introduction of new transport modes, population growth and high land values were the main forces that let cities grow limitless into the surrounding rural areas. The compact city of the past developed into a borderless dispersed agglomeration. Former villages and small towns are absorbed in the sprawling metropolis.

The functional zone of influence of the metropolis is changing year by year and our inherited static sense of boundaries cannot do justice to the fast changing reality. The only boundaries left today are the administrative ones which are mostly used for statistical purposes. And since boundaries for metropolitan areas are defined differently around the globe, we obtain statistical data which are not comparable to each other. In fact, in a recent publication on Asian cities, a little accident made that the statistics for Columbo were only supplied for Colombo Municipality with 0.6 million people which constitute only a part of the 2.8 million population of the urban area. The same applies to the definition of the metropolitan limit, where certain fringe settlements are included and others not.

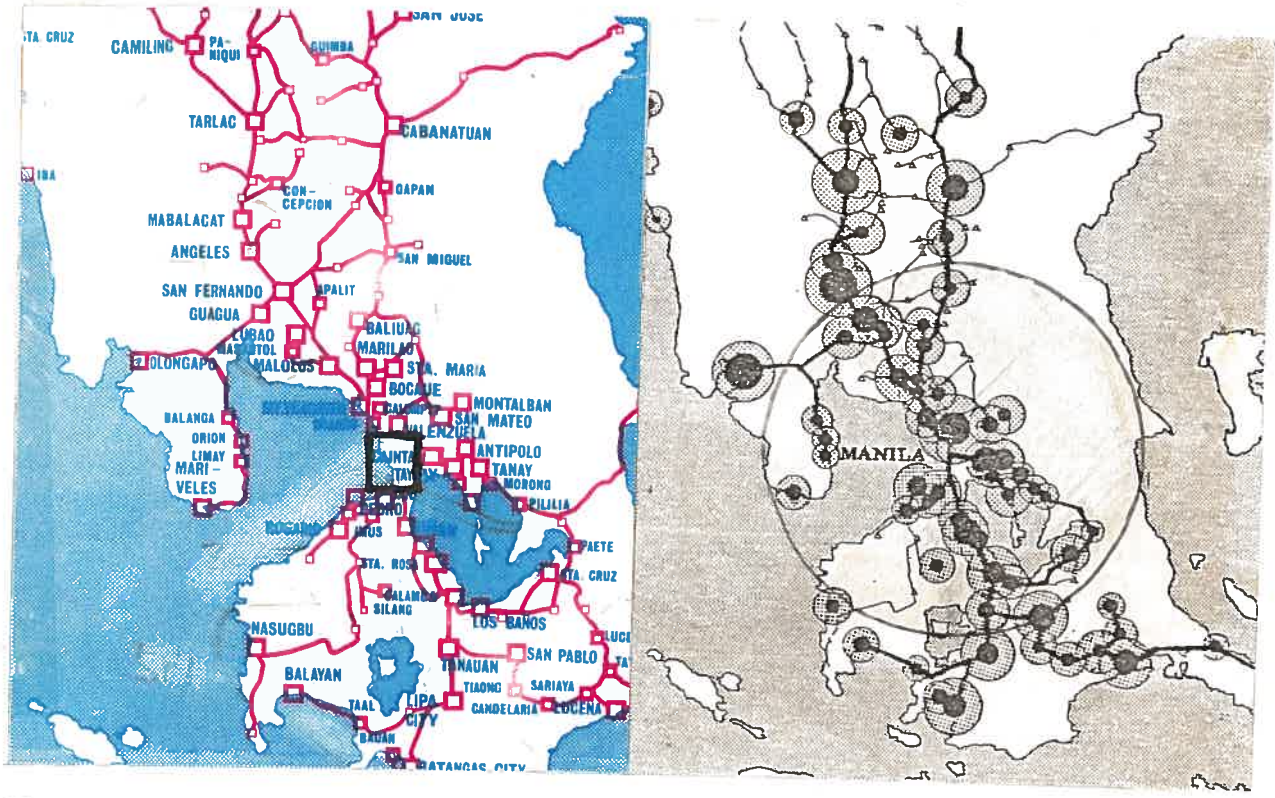

Fig. 2: Former villages in the vicinity of the metropolis grow rapidly to sizable towns, forming a new metropolitan conglomerate. The old concept of "boundaries" around towns can in no way do justice to this emerging new complexity full of social, economic and physical interaction.

In Manila, for example, it can be noted that another 2 million people are living within 30 km. of the 6 million people counting metropolis, and if we extend the zone further by 60 to 80 km., we will find that the so-defined metropolitan area would count over 10 million people (excluding those living in villages). (See Fig. 2). The loss of physical borders has contributed to the confusion of statistical data. Therefore, speaking about sheer population numbers, without looking into the specific settlement pattern, becomes a rather arbitrary thing. Ranking of cities should be undertaken with caution.

Can we handle the future? - A look-out for strategies

Since the future starts from the "here and now", let's have a look at the present first, before trying to give some thought to future policies and strategies.

The overall picture is not too encouraging. Listening to the officials of major metropolis in Asia, most of them agree that:

- fast urban growth has taken them by surprise,
- that (because of rapid growth) it is difficult (or impossible) to provide even the basic amenities,
- that there are serious difficulties in maintaining existing services,
- that local government in charge of city development had inadequate power and therefore could not discharge their duties,
- that funds for development were lacking,
- that many cities lacked the coordination with the large number of involved agencies,
- that housing, transportation, congestion, pollution, poverty, slums and squatters were major areas of concern,
- that the absence of a relationship between physical and economic planning was the cause for ineffective planning.

But there are also a few exceptions of cities that were more lucky than the majority, e.g. Singapore and Hong Kong which shall be characterized briefly:

Singapore has started in the 60's to encourage industrial investment followed by infrastructure, housing and city center development. One official remembers those days: "we started up without any masterplan, just with common sense and determination". Economic - and city development went hand in hand and Singapore since then has undergone vast social-, economic-

and urban changes within the short period of less than 20 years. The earlier colonial city based mainly on "entrepot-trade" has become a major industrial and financial center with an extra-ordinary local identity and pride.

Hong Kong's planning efforts were most marked in housing and infrastructure and is now implementing the construction of several New Town schemes in the New Territories, each town planned for between 500'000 and 1 million inhabitants. Industrial development has been rapid and Hong Kong serves as the major financial center in this region. Although the border to China looks rather tightly closed there is a strong relationship between Hong Kong and the adjoining Province of Canton; this has been further strengthened by the planned economic investment zone along the border.

The two cities of Singapore and Hong Kong (apart from Japanese Cities) are unfortunately exceptions to the rule. Whilst many of the cities under pressure agree on a large catalogue of items stated above, there is controversial view on others: for example

- believers of comprehensive development plans are contradicted by followers of the pragmatic "Singaporean approach" where common sense and strong intergovernmental coordination led by a handful of strong men did the trick.

- decentralisation of industries (to relieve congestion) from the center to satellite towns is contradicted by longer travel distances and reduced tax income of the center city.

- decentralisation of activities to other towns (to reduce migration and to improve medium-size cities) contrast with remarks by City officials that the shifting of Karachi to Islamabad had no impact on reducing its growth in the

contrary it has been growing further.

- slums and quatters have been predicted by some to be the source of political unrest while others say that no evidence to this effect has been gathered.

- some advocate more investment in slum and squatter improvement whilst others would see the positive effects of investment in the formal sector to filter automatically down to the informal sector, including the slums and squatters.

- some voice (in articles and congresses) the need for more "participation" but returning back to their desk see the difficulties of handling participation.

This list can in no way be exhaustive. It indicates among others that 'things' are not that easy and straightforward as they sometimes appear to be.

It also demonstrates that individual conditions require individual approaches. Although the phenomena is global, solutions cannot be worked out globally but rather have to be tailormade to suit local conditions.

We also realize that opposing views result from the fact that we still know too little about 'how Cities behave' and foremost, how people behave in Cities. Are the problems the planner identifies really the problems the people feel strongly about ?

We know, for example, that a squatter settler in New Dehly who uses wood for heating and cooking does this because it is the only affordable way. There is little concerne about environmental effects of pollution and deforestation. Are our approaches able to reconcile differing values of different socio-economic groups ?

Considering the strong limitations placed upon the growing metropolis by stress on housing, poverty, congestion, weak administration, lack of funds, differing value systems uncoordinated actions, it is most likely for the majority of metropolises that this state of affairs will continue into the forseable future. Few miracles will allow cities to follow "development according to Singapore style".

There is no doubt however, that many efforts will be undertaken to improve the knowledge of the complex nature of Cities, to deal with housing, infrastructure, transportation and land-aspects and to improve coordination among agencies. New agencies will be created to deal with urban development; procedures, bylaws and development guidelines will be created some with more, others with less success. Some will place more emphasis on 'institution building' whilst others will recognize the important role that great people with strong ideas and willpower can play to progress development.

Taking all these limitations into consideration there is a strong feeling, that many (if not most) actions will follow pressure. Thus the pressure exercised by growth and transformation will most likely be predominant. Let us therefore examine this process a bit closer.

The Spontaneous Process of Urban Growth and Transformation

Analizing the immense increase of urban population in Asia over the last decades, one cannot overlook the fact that only a small percentage of development has been "planned"; the vast majority of it has happened by private initiative in small steps. The sum of all individual actions, called here "the spontaneous process", leads through gradual changes/ transformations to a specific result. The transformation

process in the urban environment has various dimensions: "space", "time", "function" and "socio-economy".

In many Asian Cities, the spontaneous process is clearly visible, among others because of the absence or ineffectiveness of Government interference. A deeper understanding of this process is of wider interest to the future Metropolis, especially in fast developing South East Asian countries, since it is expected that much of the urbanisation will follow this pattern.

It has been found that the spontaneous transformation process follows certain rules, showing strong similarities between various Metropolitain areas.

The first to note is the interdependence between government interference and spontaneous process: the stronger the first, the weaker is the latter and vice versa. In fact, scholars interested in this subject, might choose to look at sample cities, where interference was minimal, in order to analize the least disturbed process. In actuality, of course the resulting urban pattern is influenced by a combination of spontaneous growth and programmed action.

The evolution of the urban area shows 3 distinct waves of processes which follow each other: The first is the "settlement" process; individual settlements take advantage of easy access and thus follow major communication networks first, whereas spaces in-between are gradually filled-in later.

The road and transport network, therefore assumes an important role as city-builder. Most of today's urban radial roads are based on former rural links between the city and its rural hinterland. The settlement pattern of various cities such as Bangkok (where waterways partly play the role of roads),

Bombay, Colombo, Jakarta, Manila, to name a few, have been visibly influenced by the basic rural communication grid which has slowly become part of the urban structure. The plot structure (plotboundaries) has been identified as the most time enduring element. In fact residential plotboundaries of several hundred years ago are still clearly visible and have undergone very few changes (subdivisions or amalgamation). The layout of the initial settlement therefore preconditions the future settlement as well.

The settlement process is followed by the second process, the transformation of "function". Residential space on the ground floor is suddenly being utilized for commerce, office, repair-shops etc. pushing residential activities either to the upper floors or to the periphery. This process occurs mainly along major communication axis' and on crossings and follows the settlement process in a distance of time and space.

With further economic development, the new activities outgrow the former residential buildings and call for their redevelop-ment. This process of physical change follows the earlier two processes also in a distance of time and space. Fast economic development in a City favours fast and large redevelopment, whilst slow economic development does the contrary.

The spontaneous process of urban transformation shows a high correlation with "accessability": the higher the accessability the higher the chance of transformation (function, building). Therefore transport and communication appear as one of the strongest "city-shapers" and it is indicated to utilize this phenomena more actively for city planning. Transport nodes and interchanges combined with a variety of activities tend to form the nucleus of future subcenters.

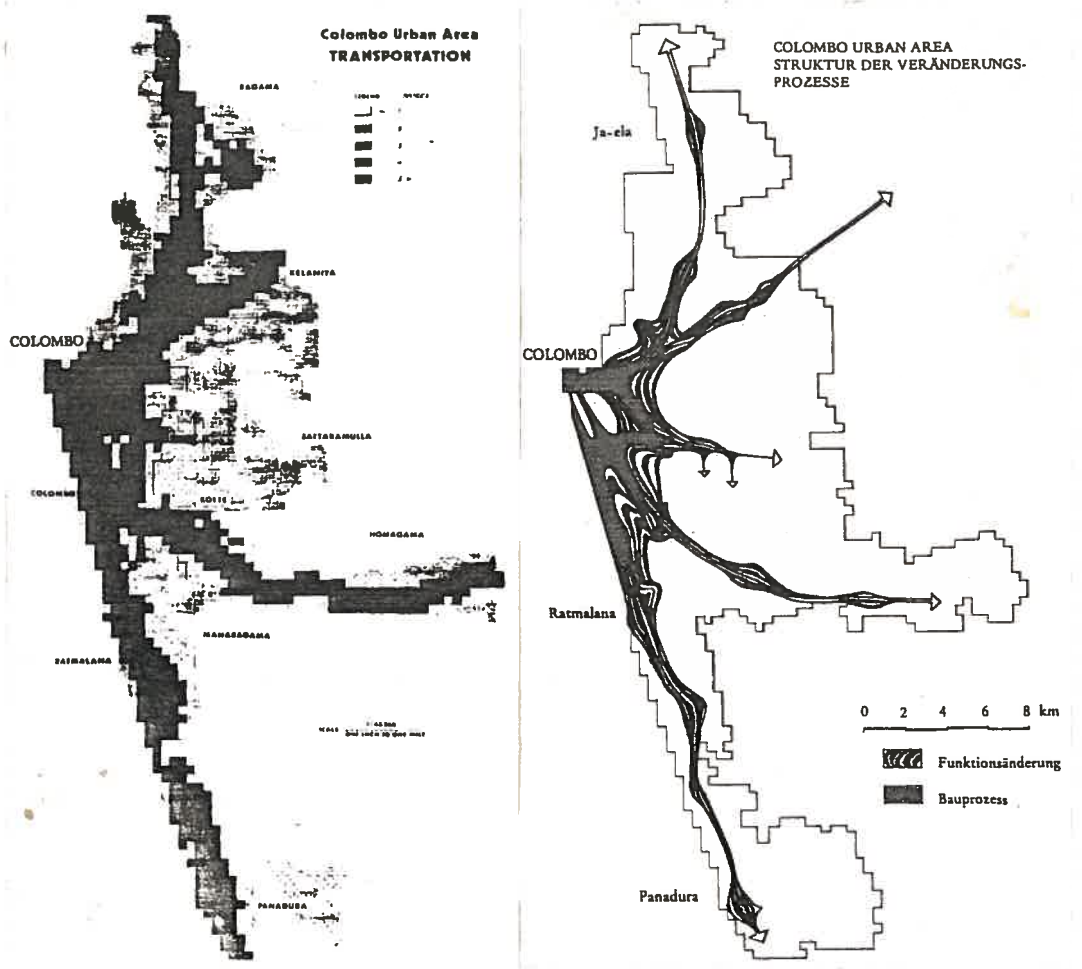

Fig. 3: Colombo urban area in 1978: the transformation process follow the major communication axis' (well served by public transport (buses)). High accessibility accelerates the transformation process.

It has been noted that in the past, various planning efforts have centered strongly around land use planning, making too little use of transport and communication as city building elements.

Whilst cities in Europe and North America grew rapidly in timeslong before the private automobile was introduced, rail-bound masstransit was the only answer to satisfy the new demand. Cities like London, Paris or New York built extensive underground masstransit networks.

The situation however, changed dramatically with the growing availability of the automobile in the 20th century. Most Asian cities grew at a time, where the automobile was becoming the prime mode of transport. Old existing tramway systems were discarded and replaced by buses and mini-buses. Roads and highways were widened at high cost, without anyone asking for its feasibility. It was simply the answer of that time.

Meanwhile, advantages of railbound mass transit has been rediscovered and many cities are today planning and/or building new systems. Although the main reason for their construction is "moving people", it is evident that they will have positive secondary effects on the restructuring of the urban tissue. Activities will concentrate ground locations of "high accessibility". One city, Toronto, has become particularly famous for high density development around mass transit stations, where developers have pursued sites around stations long before they were open to passengers. In Asia, the best known examples are the major transport interchanges in Tokyo such as Ikebukuro, Shibuya and Shinjuku, which are gradually developing into new, strong urban centers. In Hong Kong, the Mass Transit Authority has made use of this phenomena for property development around major termini and Manila is in the process of following suit.

'Transportation' has most strongly influenced urban changes during this century and it is most likely to continue to play a strong role in the future. Despite this evidenced strong relationship, there is a lack of coordination between sectorial transport plans and comprehensive masterplans. More efforts are needed to further the knowledge of the phenomena on one hand, and the practical work-relationship between agencies involved on the other, in order to make better use of the available potential which public transport offers for srengthening.

the urban area and to enhance the benefits for the citizens.

Contrary to mass transit, urban highway widening programs react in a funny way, defeating their own objective, namely deconges-tion; newly-widened highways simply shift the "bottleneck" for congestion to the next area and attract new traffic, until ... one day, they are congested again. Cost for widening is high and benefits are questionable, apart from the fact that an overdose of highway-based urban traffic tends to scatter activities further. Urban 'mass transit' and rural highways improve accessibility without the risk of early congestion and thus provides links between regions and opens them up for development.

Remembering what a Cabinet member once stated on the issue of urban highways: "But we need them (highways), we all have cars", meaning: we, who decide and ignoring that in Asian cities, bet-ween 70% to 90% of all trips are made by public transport. Remembering that decision-makers and strongest pressure groups possess all cars, expenditures on highways will continue to be high and Mass transit projects are subject to prove financial viability (something, that highway projects are exempted from). Unless there is drastic change in values towards Mass transit, 'things' will continue the way they are today and cities will disperse in accelerated ways, eating-up more valuable agricul-tural land.

Segregation of Activities:

As the urban area expands further, specific activities, once concentrated in the center, start to move out and congregate in new locations. Activities start to segregate into centers of distinct socio-economic character (sometimes even ethnic). Your address of residence and work and your shopping area will increasingly reflect your status. This process is expected to become stronger, the larger the metropolis grows.

Since each individual 'uses' only a part of the entire city space, the Author has carried out a small analysis in Manila, to record the 'Activity space', e.i., areas where specific individuals spend their time for specific activities. Samples of eight persons are graphically represented in Fig. 4

Fig. 4: Manila, urban area is in a dramatic process of transformation: people have changed their place of residence, work and shopping in the course of 30 years. Spatial mobility goes in parallel with socio-economic (upward) mobility. The concentrated pattern (1950's) has been replaced by dispersal (today) and activities are segregated. (Black dot indicates place of activity and duration (size of dot); lines indicate movements between activities.)

The two figures compare the "activity space" of 8 selected individuals in the course of time; left: 30 years ago, and right: today. The most striking observation refers to the completely changed utilization of the city-scape by the same people; concentrated pattern of the past against a dispersed pattern of today.

In more detail, we can observe further:

- with the exception of one person, all the others have moved their residence as well as workplace, shopping and recreation.
- places of residence and work have been moved away from the city center to the peripheral areas.
- workplace, school, shopping, recreation, etc. used to lie closer to the residence than is the case today. Average travel distance has more than doubled.
- the city center of 30 years ago contained a mixture of almost all activities and all of the surveyed persons frequented the center, thus crossing their paths.
- the surveyed persons today visit the city center only rarely but instead visit the new sub-centers along the ringroad.
- activity spots are now dispersed over a wide area and people rarely cross their paths.
- people are using the metropolitan area only spotwise and areas in-between the activity spots are usually registered as blank zones. Thus, the activity areas are discontinuous.
- vacated residences have either been commercialized or occupied by lower status residents (partly new migrants).

The structural change represented by this sample survey reflects the depth of urban change the expanding metropolis is undergoing. This sample lies in line with the general observation in Manila that two-thirds of all residents have changed their place of residence within the last 25 years. Moving the residence reflects crowding and deterioration in the center as well as "upward" social and economic mobility.

Crowding can be observed in residential areas close to the center and is caused by various reasons:

- incoming migrants are taken care of by their own kin and offered residence even if space is scarce.
- high land values and high rents force many tenants to sub-rent part of the premises (students, couples, small families).

As crowding increases, and other conditions of buildings and the neighborhood deteriorate, higher status residents often opt to move out and lower status residents move in. Deteriorating conditions of services (scarce water supply, broken sewer lines, flodding, etc.) can add to the rapid decay of once healthy residential areas. Reversing this trend, once it has reached a critically low level, seems to be extremely difficult: income levels of residents are not sufficient to pay for improvements, public funds are scarce, higher status residents are reluctant to move back and 'self-help' is easier said than done.

In this light, decay of certain residential areas close to the center is to be expected as time goes by and as the metropolis increases. Government intervention, as strange as it may sound, can add further to decay. One of such a dramatic experience has been made in Bombay: In 1940, a rent-act was passed since authorities were alarmed by the fast increasing rent. In essence, rents were stabilized/frozen on the 1940 values. However, because cost of living inflated as years went by, landlords were less and less in a position to spend on maintenance. Buildings deteriorated and tenants moved out. Lower status people moved-in, caring little for the condition of the building. This vicious cycle lead to a process of decay and by 1970, 40% of the total housing stock in Bombay was virtually ruined.

This example shall only illustrate that the metropolis is a complex subject and that 'well-meant' measures might produce

more ill than good.

Informal Sector Economy

Unlike in industrial countries, the metropolis in developing countries specifically in Asia, contains a strong informal sector. Generally, between 50% to 85% of all employed persons work in the informal sector, either as self-employed or in the family enterprise (in India, called "bazar economy"). Berry describes the landuse pattern in which the informal sector is located as "chaotic", a term which sounds more negative than the actual pattern is. Possibly, this stems from a desire to produce a landuse map with conventional methods, an exercise which ends in frustration, since no landuse category of western origin is able to describe the rich mixture of small scale commerce workshops, manufacturing, trading, etc. within the basically residential areas. The visitor to such areas usually notes the 2 to 3-storey buildings bordering the accessories which are full of children playing under the supervision of their mothers or relatives. Lots of men are either busy in the workshops or sit at rest with colleagues, playing games or watching the children.

Only a closer look reveals to the visitor that this supposed village, typical for the SE Asian City, is engulfed in the large metropolis and that the work undertaken in the workshop is, for example, new wooden door for one of the high-income residences, or the car-service for one of the bank managers, etc. There is a strong economic interrelation between the formal economy represented by capital intensive business, the government, and the professions and the informal economy. But this sector also caters for the needs of middle and low income markets. One typical representative is the informal transport sector operating mini-buses, motor-rickshaws, jeepneys, etc. which provides transport at non-subsidized rates and plays an important role in most Asian cities.

Squatters can be seen as the low income arm of the informal sector. They contribute about 1/3 to 1/4 of the average Asian City. Although 15 years ago, slums and squatters had the highest growth rates within cities and with maintained growth, Bombay would be one large 100% slum by 2000 if they could live on their own. In some cities, a curbed growth rate has been experienced already. During the last decade, the attitude towards the once called "culture of powerty" has changed. Although the slum is different from squatter, both are seen as performina an important role in the urban economy; they:

- provide housing at affordable levels (which hardly any authority can do)
- serve as reception/entrance for migrants to the city
- prove accommodation in close proximity to work.

The informal sector areas are located close to formal sector zones; illustrated in Figures 5 and 6.

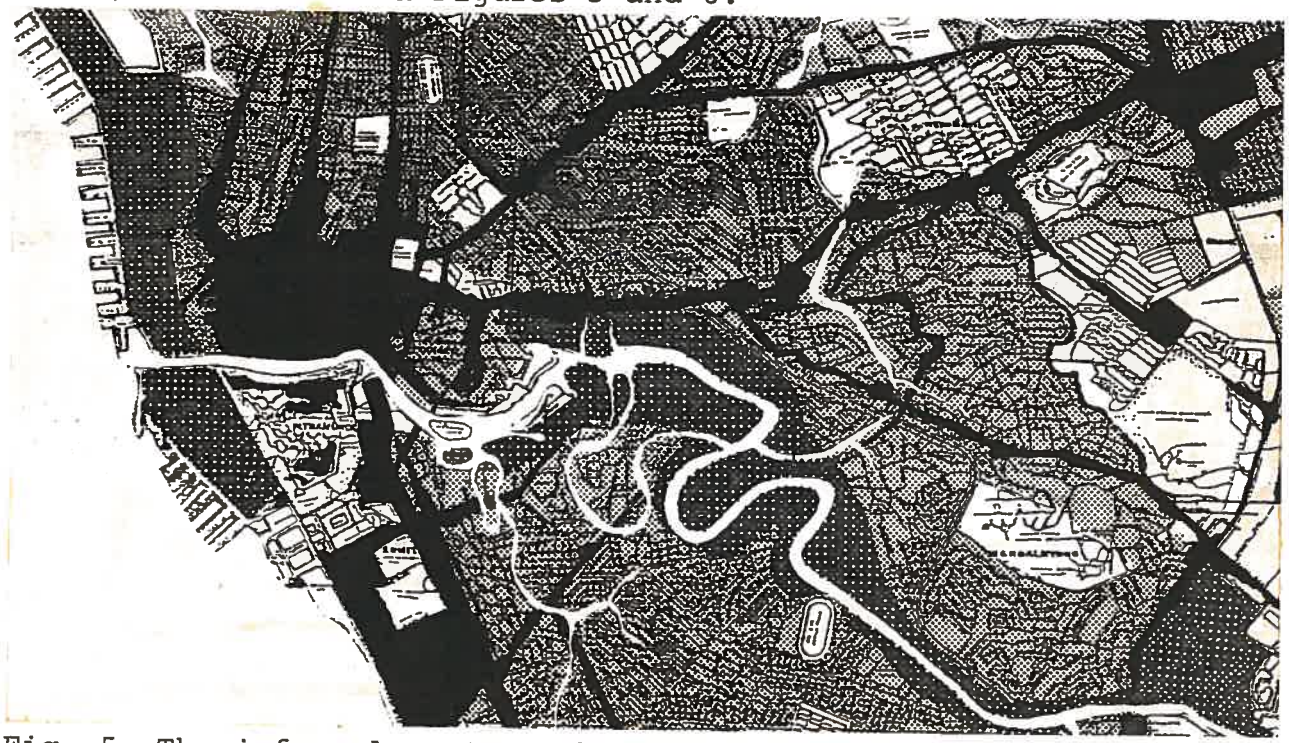

Fig. 5: The informal sector urban tissue (light grey shade) covers the majority of the settlement area and lies side by side with the formal economy areas (black: business, hatched: industries). Note area detail shown in (Fig. 6b) lies in circle at NE corner.

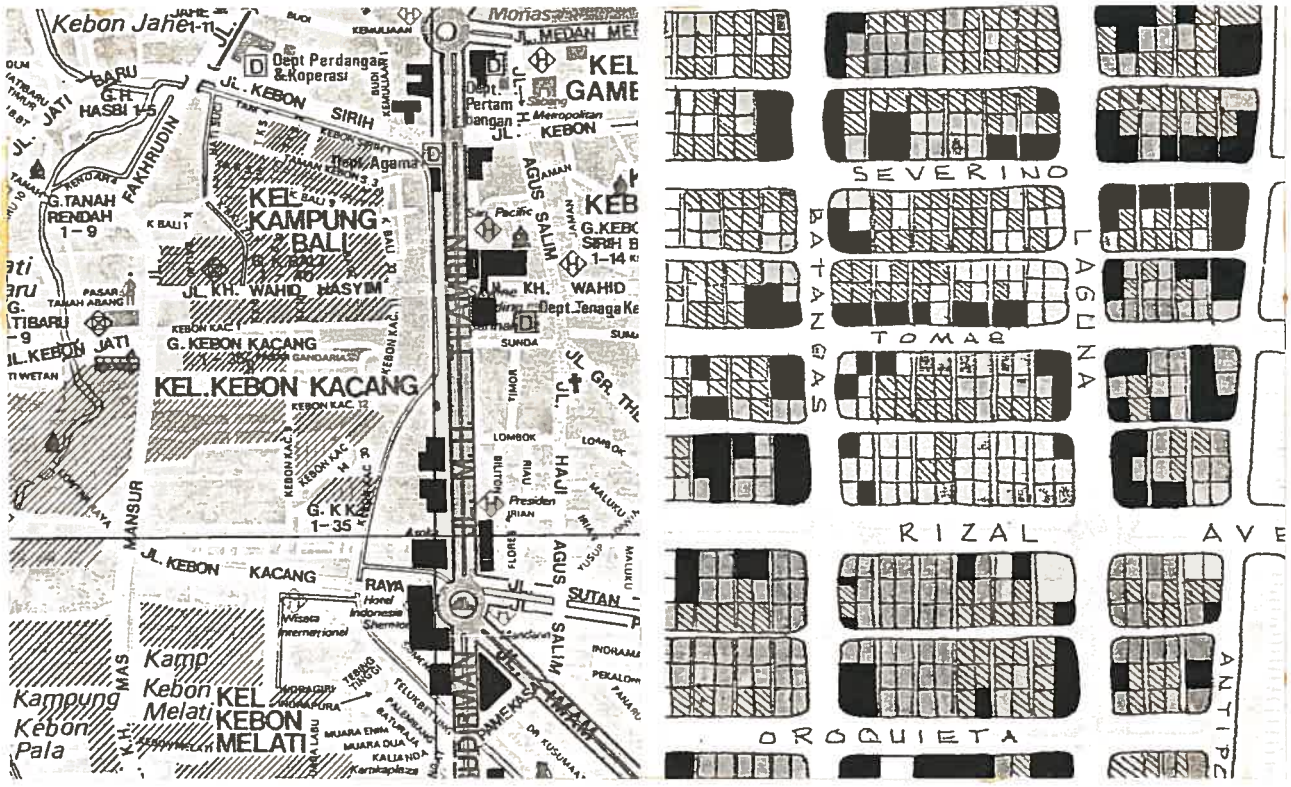

Fig. 6a) The informal sector in Jakarta resides side by side with modern business (along the highway). Many of those areas (hatched) are Kampungs, semi-urban villages of very high density, now fully absorbed in the city. Conditions are very poor ( ) but self-improvements are also noticed. Note: Kampungs have no direct access to the highway.

Fig. 6b) Typical informal sector pattern in Manila: planned originally as pure low cost housing schemes with plots of approx. 100 m^2, small scale commerce, manufacturing and trade has entered the area (hatched and dark shade): more than 2/3 of all plots contain non-residential activities. They provide important services at low cost and form an indispensable sector of the urban economy.

There is no doubt that efforts towards industrialization in Asian countries will be strong. In fact, Korea, Taiwan, Hong Kong and Singapore are the spearheads of a new group of countries for which the term 'developing countries' had to be replaced by 'newly industrialized countries' (NIC's) and thus following a development trend which Japan had initiated in the Meiji area over a hundred years ago.

The industriousness of the Asian people promises that more countries will be added to the list of NIC's in the coming decades.
- Will this change the importance of the informal sector?
- Will this wipe-out certain informal activities? If yes, which ones?
- Or will Asian culture and tradition maintain a strong informal sector?

These are the questions which are expected to influence the urban activity and landuse pattern to which the informal sector today contributes a very large component. Unfortunately, no ready-made answers are available at this moment.

Looking at Hong Kong and Singapore, one notes the large percentage of population housed in multi-storey housing. Many of them are employed in new industry and services. Informal jobs have declined (there is a big shortage of household helpers, usually one of the typical representatives of the 'self-employed'). But, migration into both cities has been controlled and thus, the typical process of 'absorption of new migrants in the urban economy' has been interrupted. Can Singapore and Hong Kong therefore serve as models for other Asian metropolis?

The question has to be left open due to lack of relevant data. On the other hand, should a change occur, it would most probably be in the direction of reducing informal sector jobs rather than increasing their number, since in most Asian cities of today, labour force supply outnumbers demand by far.

It means to keep the option open and to promote low-rise high density development, where each and every house has a direct access to public roadways; and where informal activities can take place. Large areas for such developments side by side with formal landuse have to be planned for and as discussed earlier, they shall be in close proximity to possible Mass transit corridors.