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Stability, Safety & Vulnerability of Modern Cities

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1 ABSTRACT

City building is a continuous and dynamic process acting constantly on our natural landscapes to create new forms of spatial organisation to satisfy our growing needs for more living and working spaces - driven by the forces of demand and satisfaction. As the gap between these two driving forces is ever- changing and enlarging in view of the emergence of new social and economic order, we are yet to achieve a stable solution to this vertiginous urban growth and have reached almost near a point of total disequilibrium in all senses of sustainable city development and management.

Within a few decades our cities will shelter almost 80% of the world's population but the carrying capacities of our cities will hardly progress even 15% of its present capacities by that time, bringing the cities into the precipice of unimaginable catastrophe. We are at the brink of a climatic disaster which is mainly created by our actions, especially in and around our urban centers and our scientists are afraid that it has reached at an irreversible state.

Our earth has never been so rich in financial resources and technical advancement but the humanity has never been faced with of so many poor (touching almost 1/3rd of the world population) and the gap between the rich and poor is ever increasing. Unless we find out a compromising solution and means for sustainable sharing of our resources, our landscapes and its bio-sphere through a balanced scale of "demand and satisfaction" regarding the urban growth to save our earth and consequently our humanity, we all are going to meet the same fate of auto-destruction as we are all in the same boat, it's only the question of time.

It is therefore the high time to meet this challenge without delay, changing our city vision strategy to people, environmental and resources oriented outlook through inter-active and effective public involvement in the decision making procedure at all stages of growth to come to solvable and sustainable solution.

2 INTRODUCTION

2.1 City building is a continuous and dynamic process

The history of city building can be traced back to 4000 BC and even beyond in the valleys of Niles, Indus and Mesopotamia.

City building process is primarily focused on remodeling our natural habitat into new forms of spatial reorganization to satisfy our growing needs for more living and working spaces. Therefore, behind the expansion of cities, there are two priority driving forces – demand and satisfaction. Until now, these two forces are always dominating behind the growth of our cities and we are yet to find out any satisfactory solution to achieve a stable growth condition of cities and to control this proliferation of spatial expansion because the gap between these two driving forces is ever-growing and changing, especially with the emergence of new global social and economical paradigms.

With the development of new technologies, unprecedented growth in global economy and emergence of complex social order, especially the rising gap between rich and poor, cities, which are the mirrors of these changes, have never been ceased to grow. Today, they become more and more complex, gigantic, unmanageable and unsustainable. As a result, they are vulnerable to many known and unknown risks of diverse origin, especially from man-made ones with disastrous consequences as can be seen from the state of our contemporary urban settlements and its surrounding landscapes.

All physical and economic growths of the urbanization need supply of more resources like water, energies, materials, foods, infrastructures, space and so on. Growing cities are constantly in search of these essential ingredients for their development which are often not available in their vicinity, thus forcing them going further and further for their acquisition while depriving those remote resource regions from their legitimate local growth potentials. Such is the case of Madrid, Barcelona, Paris, London, Beijing, Shanghai, Hong Kong, Bombay, Los Angeles, Las Vegas, Mexico, and etc.; all these megacities are acquiring their vital resources and especially water from areas hundreds of kilometers away. This action is rendering these

remote regions ultimately to water-thirsty and resources-empty spots and pushing them gradually into ghost city or deserted areas and towns.

2.2 Today's policy on megacity development is a hindrance to maintain a national population distribution and balanced development

Moreover, this process is also counteracting to the prospect of realizing a balanced distribution of population and settlements development policy at the national level, which is necessary to usher a sustainable regional growth as well as the preservation of material and immaterial local heritages and resources, once the proud characteristics and "raison d'être" of those settlements.

Growing cities are continually accumulating, within a limited space, excessive concentration of habitats and activities beyond their resources carrying and management capacities which are necessary to support their growth. This drawback is, on the other hand, leading to the accumulation of huge quantity of unrecyclable and toxic wastes in their peripheries for want of adequate municipal service facilities and also generates more and more concentration of carbon or Green House gases emanating from traffic congestions, poor habitats and uncontrolled industrial activities in their growth areas. They are having long ranging impact both on the health of citizens as well as on clean water resources and in the quality of air – the two stubborn hindrances for developing a Healthy City.

By concentrating a high population within a very limited space, these cities are also highly vulnerable to many risks, such as: quick spread epidemic diseases, more number of health and life casualties in case of fire, explosion, earthquake, war and devastating floods. Examples of serious disasters originating from such causes are very frequent.

The cities of today and particularly, those fastly growing megacities are becoming more and more unsustainable and unmanageable in all senses of a safe city. They become sick with numerous management and risks problems (lack of municipal services, accumulation of wastes, poor accessibility, adequate health facilities, traffic jams, clean water and energy supply, housing facilities for all, weak municipal finances, etc., etc.) not only for their citizens but also for our environment – the very foundation of our development.

2.3 Need to change our city strategy and city vision to more people oriented

It is therefore crucial today to change our city building strategies and city vision outlooks not only for our survival for tomorrow but also for our future generations as well as our surrounding bio-diversities and the eco-system - the backbone of our living environment. This risk has been clearly recognized in the resolution number 23 of the CLRAE (Conference of Local & Regional Authorities of Europe) in the context of European Landscape Convention.

The impact of modern city building process on our living space and its quality, our environment, our resource situation, our social structure and finally our civilization will be highly critical within a near future unless coordinated drastic actions at all development levels (planning, decision & execution) are not put into practice without delay from local to national level and even at the global level as it is now becoming more and more evident.

This is the time to analyse from locally to globally why many a Millennium development programs have failed to achieve the desired results in controlling the urban degradation, uplifting the social condition and realizing encouraging results in achieving sustainable development?

These mega settlement centers, a super concentration of economic and development activities, are becoming more and more gigantic, resources-greedy and pollution producing spots on our planet with consequent impacts on the preservation prospect of our resources and our environmental system. The later has already crossed the threshold of an irreversible critical state in a good number of earth's urban centers as recognized by numerous UN, EC & WB's reports.

The earth's countryside is emptying out, more quickly than we can imagine. It took about 10,000 years for the human population to become 3 percent urban — a period extending roughly from the dawn of human settlement until 1800 AD. A century later, our Earth was still just 14 percent urban. But in 2007, according to the United Nations' vision, we have crossed a critical threshold of urbanization. For the first time, more than 50 percent of the world's population is living in cities rather than in rural areas. By 2030, some projections predict that more than 80 percent of humanity will be urbanites, with many living in shanty-towns and the

slum-choked cities of the developing world and millions of shelter-less people in both developed and developing one.

Therefore, the challenge is big and so are the tasks. They need to be tackled though primarily at the local level but at par with global context and supported by workable rational policies, participative actions at all levels of population and actors and backed with transparent accountability for search of real answers – why things have not so happened? Why past actions have been failed?

3 CITIES ENVIRONMENT AND DEVELOPMENT

3.1 Cities are artificial entities

Cities are created and developed by men by working on natural landscapes and elements that have been existed in a stable state since hundreds of millions of years ago when they were created. But the manmade interventions to change them has broken the original "Systemic or Structural Chain" that was holding together this "Total land & Environmental System" in a stable state

During the city development action, we often ignore this structural chain and intervene inconsiderately in the spatial structural system to facilitate and accelerate the development works - such as, excavation and construction of roads and buildings, terracing, cutting the trees and even destroying the forest, modifying the soil cover, changing the river bed, constructing dams & barrages, carrying out land-fillings without analyzing their raison d'être, etc. & etc.

Or, by breaking this chain without taking appropriate compensatory measures, City building exposes the whole land and environmental system into risks situation not only from the point of view of its physical stability (hydrology, geo-physics, etc.) but also its local resource reserves specificities (water, minerals, etc.), and bio-diversities, exposing thereby the initial stability condition of the "Total System" into "vulnerable risk situation". This we can witness very frequently in cities all over our planet (landslides, flush-flooding, pollution of surface and sub-soil water resources with adverse impacts on local life system, etc.).

When we fail to foresee and evaluate the impact of degradation of this systemic chain in the city development process, we may create a sort of "Settlement center" but surely not a safe, sustainable or a Stable City. If we look into the effects of the post-war urban growth of our big cities at the planetary level, we can hardly ignore the continuous and risky degradation of our man-made living spaces and their impacts on our socio-economic, cultural and planetary climatic and resource situation. In the peripheral areas of Shanghai, Dhaka, Calcutta, Bangkok, Delhi and elsewhere, the subsoil water reserves are becoming either unfit for human consumption (arsenic concentration) or insufficient and they even dried up as an impact of too much mineralization of soil surface and heavy pumping out of water to meet the local urban need? The subsoil of Calcutta, Bangkok, Dhaka, Cairo and many other cities subsides gradually every year due to permanent loss of substantial quantity of subsoil water for lack of non-replenishment with high risk of building collapse.

3.2 Relation between Environment and Development

If we look to the internal relation between Environment and Development we can clearly see that Environment and Development are two inseparable elements – Environment is the media where we built. This we have received from the Mother Earth, whereas, Development is what we create on this heritage to satisfy our needs. From this point of view, environment is the foundation or the mother of all developments. Without full consideration and respect of the environmental chains of a space, we cannot create a physically sustainable city on this space. Unfortunately, in the modern city building process, today's experts and specially the politicians, though accepting this truth, has failed to apply or integrate these imperative considerations in the development decision. Today, EIA and SEIA studies are imperative initial actions before deciding or carrying out any spatial development project.

In this context, landscape consideration must be a mainstream technical, political and public safety concern. People are more and more critical to the alteration of their surroundings by technical and economic developments in which they are the main victims but have no say. We must remember that once we loss a landscape we shall never recreate it, it is lost forever. Build with the Nature is more Reasonable, Safe and Sustainable than destroying it - ignoring it, is to land into risks.

3.3 City, Water and Development

The relation between water and development is inseparable. Without stable and safe water supply resources no sustainable city can be developed. World's city development history manifests vividly this relation. Almost all big cities of the world have their own rivers or other types of water-front (sea, lakes, etc.). When the cities were in a manageable dimension, these water resources were the life of our cities. However, in course of time, during their growth, these rivers have become atrophied by building development and mineralized urban surfaces, rendering them almost to large urban drains of polluted waters. Or, these rivers represent the drainage channels of the whole natural basin of the area where the city is established as well as the primary water source, not only for the city but also the bio-diversities of the basin. Choking them artificially by irresponsible building development around their barges tantamount to cutting the branch of the tree where one is sitting. In our urban history, examples of city destruction by river floods are numerous. Therefore, city's river is an integrated part of the city and keeping the river healthy and in dynamic condition constitutes an integrated part in the sustainable management policy of the city. The same is also true while building in low-lying lands or too near to the sea shore, particularly in the tropical areas.

4 IMPACT OF MEGACITIES VS BALANCED REGIONAL AND NATIONAL DEVELOPMENT

The impact of megacities is not confined locally. Many of them are covering an urban area more than hundreds of Km² and even more. If we consider their urban hinterland population, it surpasses tens of millions of individuals. They are almost a "city state" like Singapore, Brunei, Lichtenstein, Monaco, etc. The impact of these megacities is considerable at the regional and national level particularly, concerning their economic importance, environmental impact and resource consumption. Many of them alone consume more than half of the national resources and even more leaving little chance to other smaller towns to develop comfortably or sustainably.

As these cities grow, flux of migratory population becomes more and more intense. They create pressure on all the functioning elements of these city (infrastructure, water, energy supply, housing, public facilities and amenities and so many others). If appropriate investment facilities, management capacities and resources are not developed in time to accompany their growth need, not only environmental degradation will start affecting the deterioration of the living condition of the citizens in all spheres of their life like, livability condition, pollution, social stress, etc. but also this influx of migratory population is going to leave a serious human resource vacancy in their places of origin. Under such situation, the regional or national government is unable to develop any effective policy of balanced distribution of population through local initiatives of economic development and preservation of local cultural and material heritages. In countries like Bangladesh, China, Indonesia, Viet Nam, South Africa, Malaysia, Cambodia, in the hinterlands of Delhi, Bangalore, and Bombay this effects are very much predominant.

On the other hand, high concentration of public facilities within these megacities solely on consideration of solvability criteria accentuate the early death of the intermediate cities for the lack of basic public facilities. Even in the transport planning policy and investment, it is easy and quick to travel between two big cities with hundreds of miles apart than between two intermediate cities or between a big city and an intermediate one. Or, in the national budget everybody's contribution is almost the same – a mockery to democratic condition!! This is clearly not a sustainable development policy.

From social point of view, very often, this emigrated population faces much difficulty to integrate with original local population of the core megacities and is obliged to create their own living quarters with their own living specificities giving rise to social stress and conflicts. This is the case of Shanghai with inner city's new population, peripheral city's original population and outer peripheral city's migrated population originating from remote provinces. Same also the case with Ho Chi Ming city in Viet Nam between north & south, Kuala Lumpur in Malaysia, Dhaka in Bangladesh, Bombay & Calcutta in India, Rio in Brazil and there are so many examples in the world.

These megacities are absorbing all essential development resources from their hinterland extended over thousands of square kilometers around, leaving once-vibrant communities situated in these hinterland to slow death and creating within their urban areas miserable urban society. Can we term such development a stable and sustainable one??

5 CITY BUILDING STRATEGY AND SPECULATIVE BANKING APPROACH

The rapid growth of our cities that are going to accommodate within a few decades the majority of earth's population is going to transform them into powerful city-states. But almost all of them are already becoming resources, water and space hungry cities frantically looking for more supply of resources and materials beyond their administrative and even national frontiers (China, India, Brazil and many a Gulf Countries' cities).

Against such a high demand, the supplies are limited. Therefore in such a state of affair every material ingredient is negotiated in speculative market. As a consequence, our city building strategy has become purely a speculative banking proposition with identical approaches i.e., demand driven investments looking for a faster rate of return, totally oriented to the solvability or paying capacity of the users, without any consideration of the environment and justified uses of resources as well as social needs. All these together, at the bottom line, make the city products reserved for those who can afford to pay the cost. And this process is leading to the division of our urban society, slow disappearance of the middle-income citizens – the backbone of city's cultural development, creating more and more poverty, particularly the extreme one, with an increasing number of homeless or vagabond populations and ultimately, fast degradation of the environment and the living quality of our urban areas. Consciously or unconsciously all our mega cities are moving steadily to unsustainable state, beyond the management capacity of the city authorities. Recent state of Japanese cities following the earthquake and Tsunami shows vividly how weak are our cities to resist the risk events, especially for the safety of citizens and not to mention of its infrastructure safety.

The immigrated population from the country side coming in search of livelihood, with their only capital – the cheap labour, settled in these megacities facing with acute shortage of all urban facilities and survival ingredients. This phenomenon is not only a characteristic of the developing world but has also started in the developed ones and more particularly in the countries of rapidly emerging economies such as China, India, Brazil, Mexico, etc... In the periphery and surrounding suburbs of all these towns, this dismal image of decadent human habitats is vividly present. Around these ghetto towns of rich and poor are emerging growing social tensions, increasing delinquencies and drug related crimes – signs of the image of unsustainable city development process.

5.1 Economy & City

Though economy is a fundamental part of the city building process and a healthy and strong urban economy is the pillar of sustainable development but this "Economic outlook and opportunity" must be people, environment and resources oriented. This should be based upon "cost-benefit analysis" in consideration of (1) the resources capacity of the settlement centre, (2) investment environment in consideration of the shadow costs of all development which includes: the maintenance cost of the developed products, impact cost on environment, on society and on non-renewable resources etc.

In a word, the proposed Urban Economy must be sustainable for the citizens and especially for the vulnerable groups, local employment oriented, environmental friendly and socially adaptable.

5.2 Gigantism is the new keyword of the modern city architecture

In this fast developing economic world, gigantism has become a global order and the new Key Word in today's city building strategy. Driven more by the spirit of competitiveness and exhibitionism of growing economic power, the new architecture of these cities has been changed – from construction of modest and socially oriented buildings to ever-higher energy-greedy tower buildings representing more an architectural parody with uniformity rather than meeting the specific and basic needs of the concerned population (the primary aim of architectural science).

These buildings are built irrespective of the climatic, energetic, water supply, social and cultural consideration, which are the guide lines for sustainable architecture. They become not only resource greedy but also cost ineffective in terms of their utility and perenniality, security and safe accessibility in case of fire and other risks. Unmatched with the capacity of the local municipal finances, municipal management and resources capacities, these cities are becoming growing centers of pollution, under serviced, life and social risks and finally unsafe for urban life.

Thus, one can find hardly any differences in the skylines of Shanghai, Kuala Lumpur, Bangkok, Sydney, Mumbai, Abu Dhabi, Jeddah, San Francisco or Rio. There is an abrupt break between this new City architecture and the local cultural characteristics that has evolved during last hundreds of years in harmony with the local materials, environment, climate and culture. This tendency of sheer gigantism and irrationalities make these new cities becoming gradually INHUMAN and UNSUSTAINABLE.

It is the high time to react against this purely commercially oriented and socially indifferent city and land development policy and to introduce justified and human oriented development policy ensuring an urban development and spatial reorganization based on balanced approach between man and nature, justified consumption and preservation of our dwindling resources (especially essential and non renewable ones), respecting environmental imperatives and bio-diversities in all development projects. Only then, our urban growth and development areas will be matched with our resources, our social and development needs and our environmental heritages and ultimately this, in a holistic way, will be leading to Safe, Sustainable and Humane cities.

6 WHAT IS STABLE AND SAFETY CITY

Today, the word "Sustainable Development" has been so widely and loosely applied for everything that it has lost its meaning and significance and has become a political and commercial slogan from experts to street person (even I have heard using this word in the church by the priests while celebrating the mass?).

6.1 How can we define a Stable and Safe city?

City is made for people to live in for 24 hrs with their family and children. Therefore, it must respond to their living and safety needs. A city has not been composed of only its physical and spatial ingredients but also and most importantly its citizens, their service facilities, welfare aspects and management capacity and finally their pride for their city.

A stable and safe city means a city where people can live, move and work comfortably and in security and capable of enjoying their rights within the meaning of UN definition of human rights. They can able to contribute legally, both individually and in community, to the development and welfare of the society where he lives, enable to participate actively in the decision making process of the required development that is commonly agreed upon and in consideration of safe-guarding social, cultural, environmental and resources potential of the locality or the region. In a word, a sustainable city is a city for the people, by the people and their future generation and not a speculative one built up and guided by sheer demand and supply rule and accessible to the highest offer. Though City building involve cost and investment but it can be recuperated by appropriately designed and citizens' oriented economic incentive tax structure shared by all its citizens as well as regional authority and national authorities that benefits from the cities. We very often forget that the city building cost has been shared equally by all contributors paying the public taxes whether he is rich or poor.

To fulfill this objective, the city development strategies should be built up through active and responsive participation by its citizens as well as all involved stakeholders (including the political representatives) to develop commonly defined and justified goals in terms of the carrying capacities of the community and the beneficiary region and respecting the spatial environmental characteristics without compromising the means for further development opportunities needed by the future generation. Only then, such a development policy can help to attain the sustainability condition of an urban centre. Sustainability ensures a safe continuity against all end risks and disastrous.

7 SUSTAINABLE CITY BUILDING APPROACH

7.1 City building techniques and parametric considerations:

City building is a complex process of integrating a large number of physical (landscapes) and functional ingredients (resources and infrastructure) with commonly defined specific objectives (vision and long term development goals) working within a management framework (city administration) and operated under the laws (municipal laws) by the elected bodies (local bodies) with the support of necessary management and technical facilities (EDP, IGIS & Mapping, other operation facilities, etc.).

For a sustainable development condition, it is necessary that each ingredient and component that comes into play should work in a framework of coordinated and an interactive manner just like a complex gear system in a clock. Any dysfunction within the system should be identified including its cause(s) and to be remediated without delay so that it will not hamper or put an obstacle to the performance quality of the "Total system". This is the priority condition of a sustainable system - the basis of sustainable development.

Take for example the problems of excessive carbon concentration (green house gases) in our city's atmosphere, its cumulative consequences on the global climatic change and the catastrophic effects (direct & indirect) on our present and future life system. The scientists have already identified the main polluting sources of which a majority is manmade and hence controllable. We have called for so many global discussions and have taken decisions since a few decades and have vowed to fight to decrease them, but how much have we achieved today at the global level (earth's atmosphere is a global one knowing no boundaries)? The achievements are unfortunately not very much encouraging.

The disastrous effects of the climatic change are apparent all over the globe. Disappearance of arctic glaciers at an alarming rate with its systemic impacts not only on the life system of arctic but also on ocean currents and global marine life and its associated dependants; recurring number of disastrous rainfalls, floods and cyclones as a result of increase in ocean temperature causing thousands of life and billions of dollars of material and livestock damages; changes in earth's permanent wind belts and temperature zones and its effects on global agricultural products, on floras and faunas and propagation of diseases (malaria, dengue, etc.) hitherto unknown in some regions; all are showing vividly the state of health of our planet as a consequences of manmade activities.

To meet this challenge, how much have we been able so far to reduce the fabrication of motorized vehicles which is considered as one of the major sources of carbon pollution? Instead of reducing the number of private cars, many governments, on the contrary, are encouraging car industry on the plea of employment generation by providing special premiums and aids to increase the selling of cars!!

Are we conscious of the dimension of the shadow cost in terms of materials, water and energy consumption for the fabrication of a single car? Have we put in the selling price of a car this shadow cost as well as for the recycling of an abandoned one? In fact, it amounts to several thousand times of the selling price of a car!!

How much have we progressed in installing clean energy production plants at the global level in spite of having appropriate technological advances in the matter?

All these questions are coming in the consideration of the sustainable and safe development in our urbanization policy.

We are developing "eco-quarter", but they are often conceived as an island within a vast ocean of non-eco urban space!! The effort, though encouraging, but is severely lacking an efficient global vision of integration between "good practice" and "business as usual" action.

The following few questions are very important for a sustainable development:

a) Develop a global vision regarding the city development strategy and the beneficiaries concerned through active and continuous participation of the later.

b) Evaluation of the justification of the development needs at the social level through active participation of the majority of beneficiaries and affected persons and other stakeholders.

c) Consideration and evaluation of the impact of the development on environmental situation (EIA) and especially environmental imperatives that must be protected from any alteration (SEIA) of the space where the development is envisaged including risk factors.

d) Evaluation of social and economic benefit impacts of the project on the local community even including the regional context.

e) Evaluation of resources needs particularly concerning water and energy availability and their preservation conditions (treatment and management of wastes materials susceptible to generate by the development).

f) Evaluation of affordable investment and management capacity of the beneficiaries in the long run (the future generation).

g) To prepare a cost-benefit analysis of the development project specially focusing on consideration of social benefit and shadow-cost that might be involved.

h) To develop a clear and understandable programme of awareness building with all transparent supporting information easily accessible to the public and especially the young population. This will permit to develop efficient public participation at all the decision making stages.

7.2 Transport and sustainable city

City planning and transportation networks are two integrated components and must go side by side. Efficient transportation networks constitute one of the main pillars in sustainable development. The spatial growth of the city must be followed up by the growth of matching, efficient and economically viable transportation systems. The success of sustainable city development is very much dependant on the performance quality of its transportation systems.

The city functions like a human body: We can compare this integrated relation between spatial development and transport networks clearly with the functioning system of the human body. If the city can be compared with a human body, its transportation networks are like the arterial system of the body. The later brings necessary supply of blood, the vitality of life, to each cells and muscles so that they can function properly and can keep our body strong and healthy. So is the transport system of our city. They assure proper flow of goods, services and population movements all parts of the city. If our blood flow is hampered by anything wrong in the arterial system, it is going to affect the functioning of our body and may cause cardiac failure if the wrong is persisting. So also the case in the city functioning system; if there is something wrong in the transport system, it is going to affect the functioning performance of the entire city and its living quality.

If we look to the configuration of our arteries, we can see that our arterial system has been composed of different types and sections of capillaries depending upon the zones of the body they are serving and their importance on the functioning system of the body. This is to assure the supply of a right quantity of blood at the right sequence. The arteries that are supplying blood to the heavy duty muscles (hand, feet, shoulder, etc.) are different in section than those supplying blood to the brain or the finger tips.

The above comparison shows that there is harmonious relationship between the arterial system and its configuration with our different body parts. The same is also true for our city's road system. The configuration needed for different road sections serving different activity zones in the city should be proportional to the volume of traffic they are expected to carry. The road networks should correspond strictly to the land uses they are going to serve; otherwise, there will be high risk of traffic mixing between local and by-pass, causing environmental degradation and increasing risk factors.

Moreover, when the arteries are incrusted with the deposits of cholesterol, they obstruct the blood supply reaching to the vital parts of our body and ultimately causing a heart failure. Similar is the case with our traffic flow in the city. Frequent traffic jams and road blocking due to non-conforming land uses (compared to cholesterol deposits) will affect the smooth flow of services, goods and citizens and ultimately will choke the development prospect of the area.

This, what is happening in almost all megacities of our world causing every day considerable hemorrhage to the city's economy, loss of man-hours, air pollution, health infection, human stress and to sum up – overall environmental degradation, all are because the road system of almost all our mega cities do not correspond to the functionalities they are supposed to carry out .

Therefore, a sustainable city development strategy should be backed up by an appropriate road network system compatible to the functional needs of the different activity zones to allow the flow of right type of traffic to serve the right areas in right sequences. This is also very important to preserve the environmental quality and safety of the citizens by screening out the superfluous traffic and vehicles not compatible to the designated land use and the road section of the area.

We must remember that traffic is the function of the land use and not the vice-versa. A sustainable urban plan is that in which road system and land uses are complementary to each other and not contradictory. This is what we may call a sustainable road system.

Each element of the city should be functionally justified. They should be an inseparable part of the city development component and not a superfluous one. They should be economically affordable and

environmentally acceptable. This is the basic concept of sustainable development. Sustainable development approach is not to develop a bundle of piece meal and disconnected propositions but a holistic approach of all city development component and activities interconnected by a seamless thread like a garland of a variety of flowers.

Instead of developing functionally and materially appropriate public transport systems which is adapted to the real time travel need of the citizens and inscribe them properly in the local urban plans and infrastructure design, we go on enlarging our urban sprawl invading the countryside and construct new streets and motorways to accommodate increasing number of cars in our urban centers only to be saturated in no time and looking for further extension!!. This can be a policy except a sustainable approach.

8 CITY DEVELOPMENT POLICY – CONTRADICTION AND UNCOORDINATED STRATEGIES

8.1 City development and Synergetic approach

Today's city development policy lacks severely a synergetic approach for a sustainable development. More and more, our mega cities are concentrating most of the essential living facilities, economic investments and employment opportunities within their urban centers. This, in turn, draws more people from the countryside to settle therein and create big demand in housing, water, sanitation, essential infrastructure and public facilities. As all these ingredients need huge investment for construction and maintenance, functioning and management but our perpetually poor and sick municipal finances are unable to meet this challenge. As a result, slums and shanty towns are growing in unforeseen rapidity with diseased human life flourishing in the promiscuity and poverty. Within the same city, some people can afford to live in comfortable houses of +250m² enjoying all living facilities side by side with people living in flats of hardly 30m² for the whole family and some are worse than that- paying almost the same amount of city taxes!!. Can we consider them as "sustainable development"!!

New housing quarters and facilities are continuously built but they are affordable only to a minority of the citizens capable of paying their acquisition cost as well as other administrative expenses (taxes, rents, etc.). Such a situation is highly favorable for developing land speculation and compromising the growth of an equitable society. Even, original citizens and families living in a town since a few generations are obliged to leave their family places being unable to afford and withstand this new high economic pressure of demand and supply forces. One can vividly witness this phenomenon in the new cities of China, India, Brazils as well as other emerging countries of Asia, Latin America and Africa.

The transport system of our cities and their regions are not complementary not only between different system but also to the real time travel needs of the citizens as well as in terms of their inter-connectivity, serving spatial distribution of population, activities and employment centers. As a result, many of them are overcrowded almost throughout the day and especially during the peak hours and many other systems are almost empty throughout the day.

The same also true in the distribution of housing, infrastructure and service facilities. Many densely populated areas, occupied mostly by the poor population, devoid of any service facilities even the basic ones. Or, contribution of this population is vital in the functioning of city-life system (they belong mostly to the blue-clothed workers in factories, restaurants, house hold, city cleaning, etc.). This situation is very much prominent in the megacities of China, India, Thailand, Malaysia, Pakistan, Brazil, Mexico, Argentina, Peru and Bangladesh and almost in all big cities of Africa. There is no link between the city development policy and human right convention in almost all the developing and particularly rapidly developing countries (emerging economy).

9 CITIES, CITIZENS AND SOCIETY

9.1 Cities are for the people to live in there decently for today and for tomorrow

Building city without understanding this urbanization chemistry will lead the city and its region to collapse – it is only the question of time. This is why this question of developing sustainable city building process is becoming the most important task in the global urban development agenda. To prepare sustainable development, it needs strong co-ordination between all material and immaterial ingredients contributing to

the development of which people is in the centre. Anticipation, evaluation and foreseeing of all "causes and consequences" as well the risk factors involved in the development process without forgetting the social development needs and environmental imperatives of the impact area.

9.2 Cities are for citizens

There is a strong and inseparable link between the city, its inhabitants and the society. The vision of a city must respond to the needs and aspiration of citizens assuring their well being and safety in all matters. The past actions of building our modern cities were focused mainly on satisfying demand driven policies without any consideration of these fundamental imperative requisites. Today's cities are sheltering population, which were formerly belonging to a region or even a state. They pump out and deprive valuable resources of other regions and hence their future stability conditions and development prospect. These megacities will sooner or later, become heavy burdens on our future generations. Today's city building expenditure has become a very costly process – a pure marketing product only affordable to a part of our society and creating an increasing gap between the living conditions of rich and poor with all social risks it may or going to provoke. We can see baring examples of them in the new cities of emerging nations. This new generation of cities has forgotten the need of their people for which they are built, their culture, their tradition and their poor. In the scale of time they will become unsafe and vulnerable to various risks – natural as well as human.

Therefore, justified and affordable city development policy, respecting the safety and security of all our natural environment and local resources as well as equitable social sharing will be the imperative guidelines for the next generation of cities. We need to change and adjust our city building policy from only the "satisfaction of demand" to appropriation of balanced resources and social sharing. On this methodology, we have to change our outlook and reinvent new spatial planning policy including the city building process with justified development, accessible to all and affordable by the community without depleting the available resources.

9.3 Why we need sustainable and safe cities without pushing our future generation to risk situation.

9.3.1 Development of a long range City Vision Charter.

One of the fundamental philosophies in the city development policy is that we are not the owner of city but the borrower of the land from the environmental heritage where we built our city. This helps to develops among the citizens and the city dwellers the obligations to keep this heritage free from misuses and destruction so that our future generation can be able to live there safely. From this concept it grows the responsibility of all citizens, city-dwellers and city managers to respect the city-heritage, its welfare, its landscapes and its environment.

Therefore, we need to develop a commonly agreed long range city vision charter for the future development of the city, supported by a long term development plan based on sustainable uses of its resources, promotion of its development potentials with special emphasis on economic development, protection of its landscapes and environmental imperatives especially areas need special protection and identification of non-edificandi areas and risks zones.

The main objective of this commonly agreed city vision charter is to allow the present and future development of the city building activities in a sustainable and people oriented manner. This will serve as Guide Line for all development.

This City Vision charter will not be a fixed one but is revisable at regular intervals (every 5 years or renewing of the local administrative team whichever is longer) through active citizens' participation after being evaluated regarding the achievement of its goals and the short-comings as well as the constraints. This will also allow all the citizens conscious of their city and make them active participants for a sustainable city.

9.4 Sustainable city development education

Another very important chapter in developing sustainable city is the education and the awareness building among the citizens and particularly among the children and young population towards the sustainable city building process.

One of the effective means is to introduce right from the primary level of education to develop the concept of sustainable uses of materials, actions, responsibilities, associative participation for the local area

development classes, etc. Unless such awareness is built up within the spirit of the children and the young, active participation cannot be expected or effective.

It is important to mention here that I have received very well response during my work missions in the developing countries when I have organized in many schools, specific days with specific objectives regarding some sort of development work in their living quarter. Such activities include street cleaning, road plantation, drain cleaning, traffic regulation, health week and different other types of environmental protection and preservation activities. Such actions have been complemented by an explanatory guide book. Through this education these young generation becomes conscious of some of the basic concepts of what it means of the sustainable development such as Conservation of resources, awareness to wastage, recycling of wastes, etc.

10 CONCLUSIONS

If we agree to the prediction that more than 80% of world population is supposed to be urbanites within a few decades, it is obvious that our cities will be growing faster than today with all the threats and consequences on our landscapes, environment, resources and energy reserves, climatic and air pollution, wastes accumulation, particularly toxic and unrecyclable ones and in the bottom line, their cumulative impact on the society and in the distribution of shares of development assets among the citizens, if we continue our present policy of city development strategy.

We all agree that our present city development strategies are no more sustainable and tangible with the environmental imperatives of the sites where they are built. We are steadily facing a very vulnerable situation of risks and instability within our urban space. During the post War period and until the beginning of the 21st century, our city development policy has been mainly based on Demand and Satisfaction strategy without any appreciable importance given to the impact of the development and the role of environment and landscape, more importantly, to the preservation and justified uses of our scanty resources. As a result of this ostrich policy, the urban world, together with its rural hinterland has faced with a situation that our civilization has never met before.

The most critical situation is in our climatic situation. As a consequence of manmade pollution and generation of green house gases from our activities, there is a significant increase lately in ocean temperature and its disastrous effects on our planetary living conditions. Our megacities which are growing at an incredible fast rate are playing a central role in creating this disastrous situation. The changes are so fast that it has become difficult to set up a point of departure to meet efficiently this situation.

Since the year 2000, many a world's development agencies (UN as well as national) have launched several projects under the programme of Millennium Development Goals, especially in the developing countries, to meet this challenge. But the results are so limited and less encouraging to be replicable. Squalor housing development, increase in the poverty gap, unequal share in the developed assets, constant environmental degradation due insufficient means of control and resources, increase in epidemic and endemic diseases, chronic potable water supply shortages, all are steadily increasing in these megacities to fuel their growth, especially in the developing and countries of emergent economy.

This is not because of the paucity of financial and or technical resources, because our world has never before so rich both financially and in ICT knowledge, but because of the voluntary lack of sustained and coordinated approach to the core problems and identification of main actors and long term vision where the interest of our future generation as a cardinal point has been lost. The coordination between the administrative, institutional, development agencies and the NGOs are either loose or ineffective and often suffers from lack of interactive information exchange and decision making.

Most of the master plans of these cities and their regions are either obsolete or ineffective in terms of their current demand as well as future challenges. Many of them are dealing with only one or a few aspects of the development parameters such as physical land uses and infrastructure distribution instead of making a holistic and systemic approach of all vital ingredients for sustainable city development such as environmental, justified resources uses, preservation and protection of resources, integrated transport plan, improvement in management and institutional capacity of the operational agency, legal framework for encouraging public participation and reviews, transparency and diffusion of urban data and discussion results, etc. & etc.

In the bottom line, control of city development, programming and investment of development projects are managed by parallel authorities without having any strong coordination in between them even if they belong to the same mother organization. Moreover, there is hardly any periodic review of the evaluation of the achievement and state of affair related to the city development projects. Public consultations are just fiascos without any effective impact on sustainability conditions of the development projects. As a result, there is a strong imbalance between the achieved works and the target vision and hence the scope of reevaluation of the real time needs of the community.

Cities are not islands and they are for the people to live in. They belong to a region and a hinterland with all its resources and population which supports the city and influence its development needs. Therefore, the development of the city and its sustainability are entirely depending its degree of integrity with its region and its population's needs. This demands a holistic approach to all the city building ingredients both of material and immaterial nature. If there is break in this chain, there is the risk of instability.

This is what is happening in most of the megacity development programmes. This lack of mutual coordination, resources programming, compensatory progress adjustment and reviews, etc. is exposing these megacities into risk situation and unstable condition.

Moreover, holistic evaluation of environmental reviews, resources consideration, and building of management and capacity increase skill of the operational agencies, periodic reviews and follow-up action, interactive data treatment and diffusion - all these important actions are seldom practiced in an integrated manner in the megacity management organisations. These short-comings are primarily responsible, particularly in the developing countries, development of unsustainable situation.

Sustainable development is not an end state of a city but it is a continuous process of evaluation and analysis of development needs in related to real time social progress, matched with the availability of all development ingredients without destructing the environmental chains of the surrounding landscape, its bio-diversity and the resources reserves. Sustainable development process involves a holistic and systemic approach between all development factors – material and immaterial, to search and arrive at a balanced development process meeting the justified needs of the community and its future generation. Sustainable development process is not only engaged in the physical development of the city but integrated with the overall social development of the community for today and for the future. Without a strong future vision of the community, sustainable development has no meaning.

World is confronting today one of the most serious challenge of the civilization since the history of urbanization has begun. Knowingly and unknowingly, our megacities are approaching steadily towards a catastrophic situation where the fate of 7 billions of world population has been linked and more in the coming decades. It's not a problem of any single country or between developing and developed ones but a global problem where global efforts and coordination are needed if we want a sustainable solution in the near future to meet this challenge.