POPULATION GROWTH, URBANIZATION AND THIRD WORLD SPATIAL DEVELOPMENT

Salah El-Shakhs and Hooshang Amirahmadi

The spatial development effects of trends in global population growth and urbanization in the less-developed countries are discussed. Trends point to the geographic concentration of pressures on usable resources, habitable space, local organizations, and ecological capacity. The need to develop functionally coordinated and spatially integrated policies and strategies is advocated.

The purpose of this paper is to assess the consequences and the policy implications of trends in global population growth and urbanization for the spatial development of the less-developed countries (LDCs). Major among these trends are: the rapid growth of the world population (despite its declining growth rates), the high rate of urbanization, and their uneven distribution over global and national space. While population and urban growth per se

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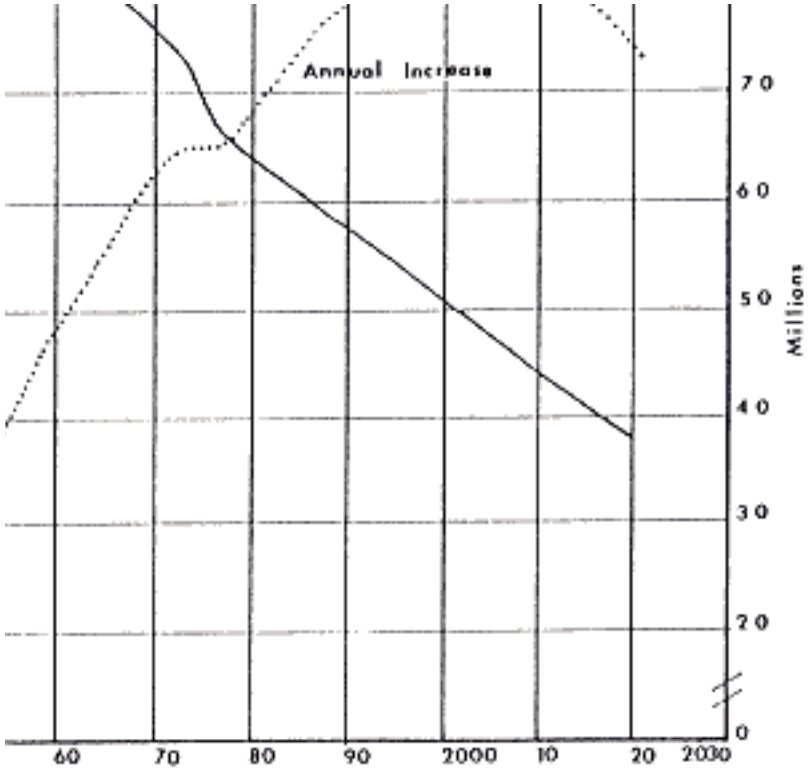
of population and urban growth and the
f the world population, possess the least,
developed, of world material resources.
global distribution of population and ur-
the high rate of population growth in the
regions (LDRs), will further deteriorate
position vis-à-vis the more-developed re-
exacerbate their already excessive urban
widen existing inequalities among social
ncrease national-regional and urban-rural
Such trends tend to reinforce themselves,
nsify the geographic concentration of
able resources, space, local organizations,
capacity in the LDRs.
rends will also have far-reaching conse-
lications for socioeconomic development and
environmental balance in the LDRs, parti-
overpopulated regions of the world, and for
, stability, and world peace. These latter
, largely remain outside the scope of this
nly dealt with in terms of their intricate
and impact on, the LDRs spatial develop-

icy implications of such trends for the
ment of the LDRs over the coming decades
:
r a better understanding of the causes and
s of spatial imbalances in the distribution
lation and resources,and of social inequal-

formulate feasible objectives and effec-
rategies for spatial socioeconomic develop-
global, regional, national, and national-
l levels;
develop feasible and effective redistribu-
asures at all spatial and interpersonal
which, in turn, requires global understand-
cooperation; and

Between 1650 and 1975, world pop
three times when it approached four bill
jected to double again by the year 202
(1984):2). The latest UN projections put
lation at over 10 billion before stabili
year 2100 (United Nations, 1982). The ann
the world population of about 80 million
jected to continue growing until it peaks
lion around the year 2000 (United Nations
evidence indicates that, while major gro
terms is expected, the global rate of po
has already begun to decline (United Na
Such decline is attributed to the dynamic
transition aided by the spread and incre
ness of family planning and fertility re
(See Figure 1). However, this new optimi
be ill-founded, if projected declines in f
realized by "conscious collective action"
5-8). In either case, we will still be
question of sustaining an ever-increasing
in the foreseeable future, particularly in

The major reason for concern about
lation growth is that its uneven distri
global space is inversely related to the
tion of world material resources, productio
cluding food production), and technologic
Both in terms of absolute numbers and gr
LDRs' population has been growing much
MDRs'. Thus, the share of the MDRs in th
tion dropped from about 31 percent in 196
in 1980, while that of the LDRs increased
to over 74 percent, respectively. Even wh
population growth approaches zero (around
the LDRs' share of the total population of
expected to increase to 87 percent and th
to decrease to 13 percent. Although inter
tion may play an increasing role in glo



Source: *People* II, 1 (1984):7.

. 1. Fertility rates and population increase in developing countries, 1950-2025.

unger. This will lead to a significant uneven
fferent functional age groups, with the work-
e elderly, and females of productive age grow-
ıch faster rate in the LDRs (United Nations,
A major consequence of such trends is the cre-
arge pool of labor force primarily in the LDRs

Development Imbalances

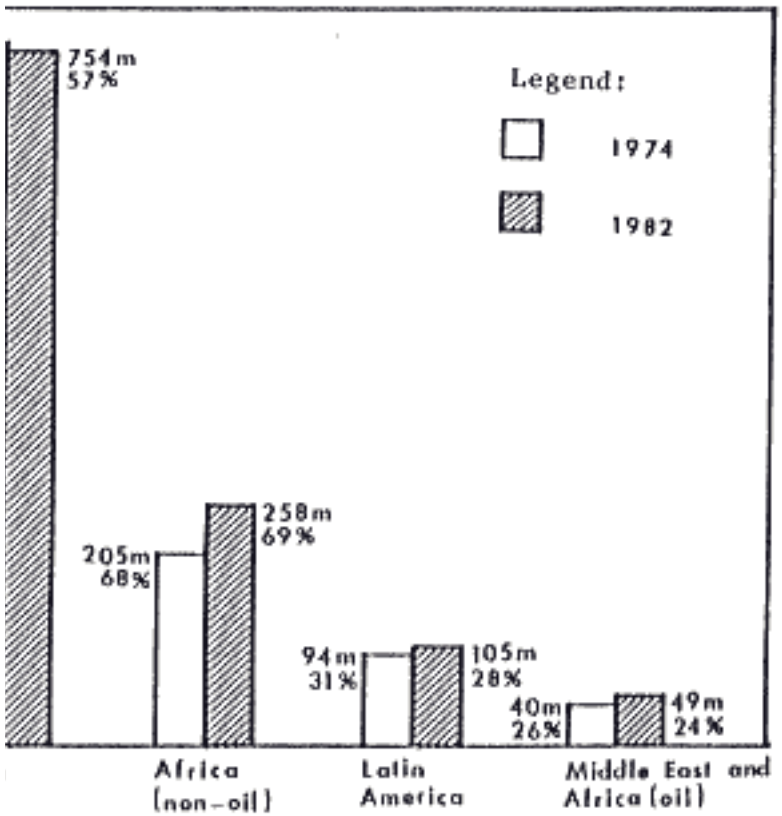
production of natural resources and of food at
level is expected to keep pace with population

Table 1

Grain and Food Production and Consumption for World and Major World Regions

	Grain					Food	
	million metric tons		Kilograms per capita	Growth Rate		Total Food (% increase over the 1970-2000 period)	Per Capit (% increas the 1970- period
	1969-71	2000	1969-71	1951-75	2000/ 1985*		
World							
production/ consumption.....	1,108.0	2,141.7	311.5	2.1	2.05	91.0	14.3
Industrialized countries							
production.....	401.7	679.1	575.6	2.5	1.75	43.7	18.1
consumption.....	371.3	610.8	534.4	2.2	1.85	47.4	21.1
trade**.....	+32.1	+68.5	+45.8	*	-	-	-
Centrally Planned countries							
production.....	401.0	723.0	356.1	2.8	1.6	74.0	29.8
consumption.....	406.6	758.3	361.0	3.0	1.6	79.9	35.3
trade.....	-5.2	-36.3	-4.6	*	-	-	-
Less Developed Countries							

ial socioeconomic, institutional, and po-
in the production and distribution of food
ainst making it accessible to those who
he poor, particularly in the LDRs, where
ulation growth is expected and where pov-
ed and increased, despite overall gains in
(See Figure 2). According to a new survey
), the number of poor people in the LDRs
.1 billion in 1974 to 1.2 billion in 1982.
diate problems of poverty and the lack of
ient food are directly related to spatial



abers unable to meet basic needs (in millions).
rcent figures show percentage of total popula-
tion in each region.

World Bank Annual Report 1984.

Table 2

Spatial and Interpersonal Inequalities
in Selected Countries in 1976

Country	Per Capita GDP 1976 (U.S. $)	Income Ineq Regional
India	141	.185
Thailand	379	.678
Columbia	608	.307
Mexico	1270	.534
Brazil	1325	.620
Argentina	1844	.313
Iran	1988	.923
Venezuela	2510	.533
United Kingdom	3922	.109
Japan	4922	.301
France	6552	.243
Germany, F.R.	7249	.135
United States	7911	.134

Source: El-Shakhs, 1982.

than 2 billion people live in countries w
capita of less than $410 ... Low-income co
with an average GNP capita of $270, account
half the people but less than a tenth of t
Development Report, 1983:144).

It was once believed that vigorous
nomic growth, particularly in the LDRs, was
needed to reduce poverty and spatial dispa
now generally held that while continued ecor
a necessary condition for long-range reducti
is not sufficient. It appears that without
tributive measures, greater overall develop
gration among unequal units, nations or regi

opulation lived in cities of over 5,000 peo-
)0. It took a century for that figure to rise
ercent (Brunn and Williams, 1983:3; Hauser
1982). However, the world urban population
in urban areas or cities defined as settle-
,000 or more people) reached over 19 percent
by 1920, and 41 percent (1.81 billion) by
old increase. The urban population is ex-
ntinue its rapid growth over the next two
ich 3.16 billion (or 51 percent) by the year
le 3). Thus, for the first time in history,
of the world population (over half) will be
n areas by the beginning of the twenty-first

this, in itself, implies radical transforma-
world's demographic, economic, and political
s, the uneven global and spatial distribu-
rban growth is likely to have drastic conse-
ts future. The share of the current LDRs
urban population increased from 18 percent
in 1920 to 56 percent (800 million) in 1980,
ed to grow to 68 percent (2.15 billion) by
e century (See Table 3). While the propor-
population living in cities will continue to
ly less than that of the current MDRs (43.7
ed to 79.4 percent) by the year 2000, their
on in absolute terms will be more than dou-
e MDRs (2.15 billion and 1.01 billion, res-
In fact, the city populations alone of the
ill exceed the total population of the MDRs
cent.
ill impact of the world's urban transforma-
only be felt by the current LDRs but, most
y their largest urban concentrations. The
cities in the LDRs with one million or more
expected to grow by some 170 percent be-
2000 (See Table 4). There will be 249 such
LDRs at that time compared to 146 in the

TABLE 3

Urban Population (in millions), Percentages of Population Living in Urban Places, and Urban Average Annual Growth Rates, World, Major Areas and Regions, Selected Years and Periods, 1920 to 2000

	(1) 1920		(2) 1920-30	(3) 1980		(4) 1975-1980	(5) 2000	
	Urban Population	Percentage Urban	Growth Rates	Urban Population	Percentage Urban	Growth Rates	Urban Population	Percentage Urban
World	360.0	19.4	2.2	1,809	41.0	2.8	3,162	51.0
MDRs	260.0	38.7	1.9	802	70.9	7.4	1,010	79.4
LDRs	100.0	8.4	3.0	1,008	30.7	4.0	2,152	43.7
North America	60.0	51.9	2.2	181	73.7	1.3	234	80.7
Soviet Union	25.0	16.1	3.4	173	64.8	2.2	237	76.0
Europe	150.0	46.2	1.5	341	70.5	1.0	408	78.4
Oceania	4.0	47.1	2.2	17	75.7	2.1	25	82.6
Africa	10.0	7.0	4.1	135	28.8	5.2	350	42.2
Latin America	20.0	22.4	4.1	238	64.7	3.8	456	75.1
East Asia	50.0	9.0	2.6	371	32.7	2.8	634	45.1
South Asia	40.0	8.5	2.2	353	24.8	4.2	818	37.1

their smaller cities and much faster than
cities of the MDRs, which indeed are show
polarization reversal (Vining and Kontuly,
of the expected 25 mega-cities (those with 1
more inhabitants) in the world by the year
will be in the current LDRs. This is in cor
out of ten such cities which existed in the w
Thus, not only is the world expected to f
pressure of major magnitude (by adding some
1.35 billion to its 1980 urban population
2000), but such pressure will be extremely
tributed with the greatest burden being borne
rent LDRs and their largest cities, in partic

Projections of future growth of supe
ever, must be viewed with some caution (El-S
Indeed, extrapolations of the form and dis
such urbanization, based on past trends, do
ily predict future outcomes with any great a
ter all, projections are not predictions. T
derestimate people's and urban systems' capac
tation and behavioral adjustment. The experi
cities in the current MDRs may be illumina
respect. It should be borne in mind, howeve
time in their history, particularly at comp
of development in the nineteenth century, (
with the same rates currently experienced by
in the LDRs (Weber, 1963). Such projections
serve as warnings of the extreme pressure
quences which can be brought about by the co
the unbalanced distribution of urban growth
underscore the urgent need to develop more ef
tegies for spatial development in the LDRs.

Implications and Prospects

The growth and distribution of the
and rural population are complex processe
dimensions and implications could not be co

ze Class of City	World	MDR	LDR	World	MDR	LDR	World	MDR	LDR	World (1980-2000)	MDR	LI
per-Cities (7000,000+)												
opulation (millions)--------	210	100	110	480	130	350	1005.6	463.5	540	1812.8	609.2	1203.7
# of cities----------	19	8	11	35	10	25	982	471	511	1342	592	750
# of urban population--------	11.6	12.5	9.2	15.2	12.9	16.3	55.5	57.8	53.6	57.3	60.3	56
ear Cities (4000,000+)												
opulation (millions)--------	311.4	135.5	175.9	718.8	179.2	539.6	653.6	298.9	354.7	1354.4	398.2	956.2
# of cities----------	38	15	23	82	21	61	254	110	124	440	146	294
# of urban population--------	17.2	16.9	17.5	22.7	17.7	25.1	36.1	37.3	35.2	42.8	39.4	44.4
rge Cities (1000,000+)												
opulation (millions)--------	653.6	298.9	354.7	1354.4	398.2	956.2	1005.6	463.5	540	1812.8	609.2	1203.7
# of cities----------	254	110	124	440	146	294	982	471	511	1342	592	750
# of urban population--------	36.1	37.3	35.2	42.8	39.4	44.4	55.5	57.8	53.6	57.3	60.3	56
dium Cities (250,000+)												
opulation (millions)--------	1005.6	463.5	540	1812.8	609.2	1203.7						
# of cities----------	982	471	511	1342	592	750						
# of urban population--------	55.5	57.8	53.6	57.3	60.3	56						

Sources: U.N. World Population Trends and Policies, 1981 Monitoring Report, Vol. 1 Population Trends (NY: UN, 1982), and U.N. Urban, Rural and City Population, 1950-2000, as Assessed in 1978 (NY: UN, 1980).

; United Nations, 1982), they continue to be
the LDRs, in rural areas, and among the il-
the poor (Vallin, 1979; *People* 2,1 (1984);
, 1982).

despite massive outmigration from the LDRs' their population will continue to expand in ecades. In 1980, some 2.28 billion people LDRs' rural areas. By the year 2000 this expected to increase by 22 percent (See ding approximately 500 million to already areas. This results in excessive pressure ources, particularly land, and more generally ng capacity of rural environments.

the natural carrying capacity of the perma- ted environments can and has, throughout his- creased with developments in technology and zation, population pressure on such capacity faster, particularly in the LDRs where such generally lag behind population increase. ations, thus, become progressively less im- termining the growth, density, and location settlements.

ent survey by the Food and Agriculture Organ- of the United Nations estimates that at tries will not be able to support their popu- ming intermediate levels of input, by the ited Nations, 1982). A large number of these located in Africa and Asia where prospects gical development are relatively low (See outcomes of such imbalances between popula- carrying capacity of natural environments increased population density; expansion of ments through rural population movement and and increased pace of urbanization,primarily -to-urban migration.

the vertical and horizontal expansion of ru- nts has largely been neglectd in population d migration research (which tended to focus on), it is of major proportions and is sus-

Table 5

Rural Population (in millions) and Rural Average Annual Growth Rates, World, Major Areas and Regions, Selected Years and Periods, 1920-2000

	(1) 1920		(2) 1920-30	(3) 1980		(4) 1975-80	(5) 2000	
	Rural Population	Percentage Rural	Growth* Rates	Rural Population	Percentage Rural	Growth* Rates	Rural Population	Percentage Rural
World	1500.0	80.6	0.8	2,600	59	1.2	3,038	49.0
MDRs	412.7	61.3	0.7	329	29.1	-1.0	263	20.6
LDRs	1087.3	91.6	0.8	2,277	69.3	1.5	2,775	56.3
North America	55.7	48.1	0.6	65	26.3	-0.4	56	19.3
Soviet Union	130.3	83.9	1.0	94	35.2	-1.1	75	24.0
Europe	174.9	53.8	0.2	145	29.5	-1.1	112	21.6
Oceania	4.5	52.9	1.1	6	24.3	-0.4	5	17.4
Africa	132.9	93.0	1.1	334	71.2	2.0	478	57.8
Latin America	69.5	77.6	1.1	130	35.3	0.8	152	24.9
East Asia	503.4	91.0	0.4	765	67.3	0.6	772	54.9
South Asia	429.8	91.5	1.1	1,069	75.2	2.0	1,388	62.9

ica	Asia	SW Asia	South America	Central America	Total
ations, all cultivable land under food crops.					
.7	1.1	0.8	5.9	1.6	2.0
.8	3.0	1.3	23.9	4.2	6.8
.6	5.1	2.0	57.2	11.5	16.3
ations, actually cultivated land, one-third crops.					
.4	0.7	0.8	0.6	0.5	0.4
.5	1.9	1.2	2.4	1.3	1.5
.5	3.1	1.9	5.8	3.7	3.6
ations, all cultivable land under food crops.					
.5	1.1	0.7	3.5	1.4	1.5
.4	2.3	0.9	13.3	2.6	4.1
.6	3.3	1.2	31.5	6.0	9.1
e populations in 2150, all cultivable land, non-food crops.					
.4	0.4	0.3	1.5	0.6	0.5
.4	0.9	0.3	5.5	1.1	1.44
.2	1.3	0.5	13.1	2.5	3.2

this table indicate the number of times by which population carrying capacity of the land exceeds expected population for the year stated. Figures dicate critical figures, where region can not pulation. But any figure below 2 indicates a n.

tch, No. 13, 1983.

d to account for the largest component of ulation movement (Gosling and Abdullah,

lation in the LDCs rural areas results in s, whose precise dimensions have unfortu- systematically documented. On the one ased demand for rural housing, building ther infrastructural activities tends to ly cultivated land and its topsoil and

and extremely skewed in the LDCs. The imp to twentieth century technology, attitude tions has led to an increased pace of rur gration while, at the same time, it has t the urban economy's capacity for labour a urban labour supply has been increasing fa than urban labour demand, thus increasing u depressing wages both of which contribute urban poverty, unrest, and inefficiencies and underemployment rates in excess of 20 are not uncommon in the large cities of th to 50 percent of their populations living levels, and with urban slum and squatt ranging from 17 percent to 70 percent. Des lems, urban areas continue to command a d share of services and amenities, of househ of political and economic power to the det areas.

What accentuates the negative impa ban growth in the LDCs, for the developmen rural and urban areas, is its uneven distri dency for concentration in favored primate gions (Vining, 1983),induced particularly of the Third World governments to concentr in growth areas. Under such conditions, i ties between urban areas and regions were compounded through a process of cumulat Moreover, early developments in transportat tions, and other factors of spatial and ec tion further accelerated this process of pc a result, primate cities grew at a rate that of overall urban growth and accumul share of human, capital, and institutiona well as government's attention and investme

SPATIAL DEVELOPMENT EFFECTS

Such trends of overpopulation and

nflicts and political instability;
umption of cultivated or arable land for
nfrastructure and of topsoil for building
d
aneous rural expansion and resettlement
which frequently leads to intrusion on
ces, watersheds, and dry land margins,all
r the environment and cause natural dis-

rge Cities)
loads on the functional, service, and or-
capacity of large cities;
inappropriate land use patterns;
ntial mobility, inflate demand for trans-
d increase cost and use of peripheral and
s as cities grow;
nces between urban labour supply and the
dern sector for labour, inflate informal
accounts for 30 to 60 percent of the la-
ncrease unemployment and underemployment,
ages,all of which unfairly impact the ur-
to 50 percent of large city populations

s and squatter settlements which present-
r 20 to 70 percent of housing in LDRs'

estion and decrease commitment to envi-
cerns; and
rbuilding of large cities in response to
little regard or flexibility for future
justments.

a general agreement that the unprece-
on of the human population, most of which
in the LDRs, will likely determine the
r the coming generation. As one of the
nts of population summed it up (Hauser,

Some of the critical consequences
are the following:

(1) The rapid urbanization and urban conce
day's LDRs are occurring at a time whe
tions are already large in proportion
and at a rate which overwhelms their s
tional, and technological development.
and pressures will likely accentuate
nate application of borrowed or impose
result in the irrational allocation an
ural resources and of land, and cause
costly damage to ecological systems.

(2) Unmitigated polarization processes, a
quent increases in real and perceived d
parities, will likely retard fertility
less-advantaged regions, intensify popu
imbalances, and heighten political
conflict.

(3) The inevitable response to concentra
pressures is the expansion of the n
capacity of ecosystems through orga
physical changes to the environment, wi
ed and unintended consequences and im
and their habitat. To a large extent,
itself in built environment, roughly a
will have to be constructed over the ne
ades as now exists (Calhoun and Ahuja,
of this rigid long-lasting construction
take place in the LDCs, and more partic
exploding urban centers where all typ
and breakdowns in service systems are
Cities are becoming awesome, man-made p
both above and below the earth's surfa
or no limits or safeguards dictated
environment and with increasingly limi
future changes.

(4) Finally, the current ills which plag

n distribution of rapidly expanding world
rbanization has created enormous socio-
al, interpersonal, spatial, and environ-
or the LDRs, and has further deteriorated
sition vis-á-vis the developed societies.
d excessive urban concentration in the
tensified the geographic concentration of
r scarce and as yet undeveloped usable
ble space, local organizations, and eco-

In the absence of objective and effec-
istributive measures, these same trends
urther exacerbate their own effects and
pping the LDRs in a vicious circle. Such
ons are the phenomenal forms of a deep-
process whose understanding requires a
e of its causes. Therefore, we not only
e causes of uneven distribution of popu-
ization, but also of material resource
anization of production and distribution,
methods of investment and reinvestment.
ires a reevaluation of both our methodo-
es and theoretical-conceptual formula-
ly in the areas of spatial interactions
rocesses. A reformulated spatial theory
ed to, and placed within, a holistic and
ific theory of socioeconomic develop-
ould we be in a position to better under-
and dynamics of uneven spatial distribu-
ution, and of the nature and timing of
rsal trends and the factors which trigger
standing is essential for effective re-
t policies whose results to date have
sappointing in the LDRs.
o reduce fertility, conttol population
late inter-regional growth, and influence
and the use of land have generally fo-

tative practices (at national and internat
and blind faith in unregulated market forces
valid. The forces and objectives of the d
population and of urbanization are complex
political in nature. They differ among cour
time in both theoretical and operational
instance:

- Population distribution patterns and obj
  with development are increasingly more
  the structure of the economy, land tenu
  tion/distribution relationships than
  carrying capacity of micro-environments.
- Rural-to-urban migration has crucial
  areas of origin and of destination, c
  themselves, and, more generally, on the
  tional population and economic growth
  nants, however, change with developme
  yet fully understood.
- The hierarchy of urban settlement sys
  and spatial distribution of urban growt
  tion of the levels of urbanization and c
  There is no magic formula for an optimu
  bution since its efficiency is a functi
  development goals and of the perfo
  largest urban centers. Thus, while
  believed that a more balanced urban
  help smoothe spatial transitions, mod
  ronmental consequences of urbanization,
  enhance the efficiency of the future ur
  issue of urban distribution focuses mo
  tive efficiency of individual cities.
- The optimum size of cities has been an
  concept. Studies seem to point out tha
  mum-size threshold may indeed be neces
  adequate economies of scale, optimali
  tive concept related to development le
  capacity to plan and manage urban e
  culturally-determined tolerance levels

lp moderate its impact, particularly on
s. However, unless such methodological
issues are resolved through further re-
sis, we shall only partially succeed in
oblems of polarization and environmental
in effecting rationalization in the spa-
n of population and socioeconomic re-
t strategies aimed at such rationaliza-
rustrated by the implicit impact of na-
national development policies and regu-
1981). Thus well-meaning efforts to
ation and resource distribution and to
regional development and hierarchies of
narily through manipulation of economic
y tend to produce opposite results in the
and mixed economies.
onal management of population movement,
nd settlement patterns (both rural and
res a high degree of commitment, greater
ctions, and true partnership in develop-
g efforts at all levels. There already
mber of organizations and institutions at
l national levels which deal separately
spects of this issue, frequently with
erns. Yet the increasing complexity,
interdependence of the economic, social,
l aspects of human development and set-
s require functionally coordinated and
ted policies and strategies. They also
rate the organizational level at which
es can be formulated and implemented.
ional boundaries (even national bounda-
reasingly meaningless or obstructive to
.

lack the capacity to organize, plan, and
e cities or indeed undertake long-range
tial development plans. Such plans nor-
ensive data and professional skills which

International organizations can he
pect by assisting in the development of ad
tion base and continued research in the a
establish appropriate standards and criter
and multi-national levels, and by promoti
tion of demographic, environmental, and s
ment factors in national development poli
On their part, given such help and with a
ment, the LDCs should develop integrate
strategies suitable to their conditions.
must account for the specificities of th
sources and for the social and spatial disp
tive redistribution measures are essential
ful development policy as are investment
sources and rural areas. Concepts such as
enue sharing should be promoted within the
gional autonomy, federalism, or decentraliz
The public and cooperative sectors must
role in promoting such policies. Tighter
velopment processes is a precondition for
plementation of plans and projects. In th
democratic environment allowing for critici
and exchanges of views, we may not be abl
our mistakes and reformulate more effectiv
tegies.

The reversal of polarization trend
ingly interdependent national and interna
seems to be contingent upon achieving an
rial, social, and spatial distribution
benefits and of political power at global
interpersonal levels. This, in turn, re
tional understanding and cooperation and
appropriate institutional mechanisms to pre
of power and to promote development ass
LDRs. Agreement over the New International
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