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## URBANISATION AND ITS IMPLICATIONS FOR THE STATE OF KARNATAKA

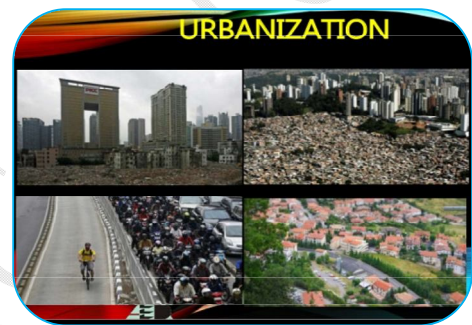
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### ABSTRACT:

Urbanisation is something every economy goes through by and large, in particular the emerging marketing economies (EMEs). India stands out in the comity of emerging market economies on economic parameters and naturally, the issue of urbanisation is conspicuous in India, given its huge population and huge area. Karnataka, one of the leading states of India. is no exception to this rule? The state is the largest exporter of IT and ITES and its capital city Bengaluru is known as the Silicon Valley of India. Manpower from other states of India and from the countries in the immediate and distant neighbourhood moves to Bengaluru for this reason thereby accelerating the urbanisation of the state. In the circumstances, the researcher sought to ascertain the implications of urbanisation for the state of Karnataka and in the light of the implications sought to identify the worst effects of urbanisation. He interacted with two categories of respondents for the purpose, namely, farmhouse respondents and urban planners. The researcher concluded that urbanisation hurt the income of farmhouses directly and indirectly. On their part, the farmhouses, on being hurt, might try to convert their farm into commercial plots by gaming the system. After all, it would prove more lucrative for them. Arresting the decline in the number of waterbodies and managing water and water resources optimally are among the steps that could go some way in mitigating the worst effects of urbanisation.



Urbanisation is something every economy goes through by and large, in particular the emerging marketing economies (EMEs). India stands out in the comity of emerging market economies on economic parameters and naturally, the issue of urbanisation is conspicuous in India, given its huge population and huge area. Karnataka, one of the leading states of India. is no exception to this rule? The state is the largest exporter of IT and ITES and its capital city Bengaluru is known as the Silicon Valley of India. Manpower from other states of India and from the countries in the immediate and distant neighbourhood moves to Bengaluru for this reason thereby accelerating the urbanisation of the state. In the circumstances, the researcher sought to ascertain the implications of urbanisation for the state of Karnataka and in the light of the implications sought to identify the worst effects of urbanisation. He interacted with two categories of respondents for the purpose, namely, farmhouse respondents and urban planners. The researcher concluded that urbanisation hurt the income of farmhouses directly and indirectly. On their part, the farmhouses, on being hurt, might try to convert their farm into commercial plots by gaming the system. After all, it would prove more lucrative for them. Arresting the decline in the number of waterbodies and managing water and water resources optimally are among the steps that could go some way in mitigating the worst effects of urbanisation.

**KEYWORDS:** conspicuous; EMEs; farmhouse; implications; urban planners; urbanisation.

### 1.1. THEORETICAL BACKGROUND OF THE PROBLEM:

Urbanisation has been engaging the attention of the government and urban planners for quite some time. The investment the government makes in infrastructure to meet the challenges posed by urbanisation has been

always short of what is needed for the purpose. Resource crunch on the one side and the proliferating urbanisation on the other have left the cities of the country in a horrible mess and Bangalore is no exception to this rule.

### 1.2. STATEMENT OF THE PROBLEM:

Before deciding on the modus operandi of dealing with the

problem, one has to consider the implications of urbanisation for the country, for Karnataka and for Bangalore. Having done that, one should also identify the steps required to mitigate the problems that the issue of urbanisation poses. This is because urbanisation is desirable to a certain extent for countries like India. Hence the country cannot afford to do away with it – not

that India can do away with it even if it wants to, though. It is this problem the researcher seeks to deal with.

### 1.3. REVIEW OF LITERATURE:

1. The Supreme Court has stayed the pumping of treated wastewater to Kolar ponds and lakes from the wastewater treatment plants in the Koramangala and Chalaghatta valley of Bengaluru (Vishwanath, 2019). The stay means that the treated wastewater will flow into the Dakshina Pinakini, join the untreated wastewater and reach Kelavarapalle dam near Hosur in Tamil Nadu. These waters will then be used to irrigate 1,085 acres of land to be cultivated by Tamil Nadu farmers. Some proportion of the water will also be drawn by Karnataka farmers through pumps for irrigation.
2. During the 2011 census, India entered the league of water-deficient nations (SANDIP, 2018). A nation is considered water deficient if the per capita availability falls below 1,700 cubic meters per person. The per capita water availability fell by 15 percent during the first decade of this century to 1,545 cubic meters per person. Now it will fall below 1,400 cubic meters per person this summer. Though the pace of depletion has reduced in the last few years, the country is still consuming much more than is being replenished by nature. And this poses a problem. The present generation will be leaving a troubled legacy for the next generation unless the country initiates remedial action swiftly to reverse the trend. According to the Central Water Commission, 85.3 percent of the all water consumed was for agriculture in the year 2000. This is likely to fall to 83.3 percent by 2025. India does not spend on conserving water consumed for agricultural operations. Surprisingly, water conservation is undertaken in the industry and utility sectors, although the two together consume less than five percent of the nation's water.
3. Karnataka government's ambitious project of supplying treated water from Bengaluru to the arid districts surrounding Bengaluru has not found favour with the law. The Karnataka High Court directed the government to stop the pumping of treated water until further orders. (<http://bengaluru.citizenmatters.in>, 2018). However, experts are convinced that reusing treated water is a good strategy, if the right processes can be put in place. But with residents of the districts involved protesting and their elected representatives supporting the protest, one wonders whether the project will ever take off.

### 1.4. Research gap:

The reviewed research pieces have done well to trace the circumstances behind the unplanned and uncontrolled urbanisation in the country in general and in the state of Karnataka in particular. A deeper analysis would have helped identify the factors that could have helped in mitigating worst effects of urbanisation. It is this gap the present study proposes to bridge.

### 1.5. Scope of the study:

The study confines itself to the major stake-holders, namely, farmhouses and urban planners based out of Bangalore, Karnataka. Farmhouse respondents have been reckoned because they inhabit the outskirts of metropolises. The said outskirts are often used as landfills by the local self-governments of the metropolises. Groundwater from the outskirts is exploited by the said local self-governments to provide potable water to its residents and to meet the water requirements of the industry operating within their villages. As a result, the farmhouses experience pollution, witness a reduction in their water table and in the fertility levels of the soil of their farms.

### 1.6. Objectives of the study:

The objectives of the study are to:

1. Analyse the implications of urbanisation for Karnataka
2. Ascertain how the worst effects of urbanisation can be mitigated

### 1.7. Hypothesis proposed to be tested:

The study proposes to test the following hypothesis:

“Treatment of solid and liquid wastes will become a daunting task upon urbanisation”

### 1.8. Research design:

The following paragraphs explain how the research is designed.

#### 1.8.1. Research methodology:

The study is descriptive in nature and uses the ‘fact-finding’ survey method. Interview schedules specially designed for the purpose were administered to the respondents for collection of primary data. Being a structured / directive interview, the interview was conducted with a detailed standardised schedule.

#### 1.8.2. Sources of data:

Data required for the research was collected from both primary and secondary sources. Primary data has been collected from farmhouses and urban planners. Secondary data has been collected from the financial press, house journals of industry bodies/associations like CMIE, FICCI and CII and various departments of the government of India and the government of Karnataka, in soft version and hard version. In addition, the researcher interacted with other stakeholders like occupational health and safety agencies, environmental regulatory agencies, rural residents and experts like toxicologists and epidemiologists on the subject.

#### 1.8.3. Sampling plan:

**Farmhouses:** Given the limited number of Farmhouses in the area covered by the study, purposive or judgement sampling under the non-probability method has been deployed. The researcher selected 50 farmhouses operating in the area covered by the study at least for the past five years. This criterion, according to the researcher, is the most appropriate one for the present study. What is important is the typicality and the relevance of the sampling units to the study and not their overall representativeness to the population. Thus, it guarantees inclusion of the relevant elements in the sample. Probability sampling plans cannot give such a guarantee.

**Urban planners:** Given the limited number of urban planners in the area covered by the study, purposive or judgement sampling under the non-probability method has been deployed. The researcher selected 50 urban planners consulting in the area covered by the study at least for the past five years. This criterion, according to the researcher, is the most appropriate one for the present study. What is important is the typicality and the relevance of the sampling units to the study and not their overall representativeness to the population. Thus, it guarantees inclusion of the relevant elements in the sample. Probability sampling plans cannot give such a guarantee.

#### 1.8.4. Data collection instruments:

Interview schedules, specially designed for the purpose, were drafted and pre-tested in order to identify the possible weaknesses in the instrument. Upon receipt of feedback, they were appropriately revised and finalised for administration to the respondents for collection of primary data.

The Interview Schedules featured open questions and closed questions. Open questions were included since the objective was to identify opinions, ascertain degrees of knowledge and seek suggestions and more information. In some cases, the subject matter of the question could be outside the range of the respondent’s experience and hence open questions were deemed a better alternative. Further, open questions would help in determining the depth of the feelings and intensity of the expressions of the respondent (Krishnaswamy & Ranganatham, 2011). Open questions might give the respondent a chance to think through the topic. Since it is practically impossible for the researcher to assess the level of information possessed by the respondent, open questions came in handy. The response freedom inherent in open questions could elicit a variety of frames of references from the

respondent, which might provide unanticipated insights. Given the qualitative nature of the values the variables would elicit from the respondents, they could lend themselves ideally to statistical tools like Likert scale and chi-squared test.

### 1.8.5 Data processing and analysis plan:

Non-parametric statistical units were used to test the association between some qualitative characters and conclusions were drawn on the basis of formation of  $H_0$  and  $H_1$ . To be specific, Likert scale and chi-square test were applied to test the hypotheses.

### 1.8.6 Limitations of the study:

Primary data has at times been deduced through constant topic-oriented discussions with the respondents. It is possible that a certain degree of subjectivity, albeit negligible, has found its way in. In addition, one has to admit that the respondents, being human, could err. Hence, the researcher would like to admit that the findings of the thesis, which draw equally heavily from the discussions the researcher held with the said respondents, may have been affected, albeit to a negligible extent. In the circumstances, it will not affect the accuracy of the findings of the study.

### 1.9. Analysis of primary data collected from the 50 farmhouse respondents:

In the following paragraphs, the primary data collected from 50 farmhouse respondents is analysed.

#### 1.9.1. Implications of urbanisation for Karnataka:

Urbanisation has its own implications for Karnataka going by the views of a cross-section of stakeholders. Hence the researcher sought to know from the respondents the implications of urbanisation for Karnataka. Their replies to the query appear in the following Table.

**Table-1: Implications of urbanisation for Karnataka:**

<b>Implications</b>	<b>Number of respondents</b>
It will hurt the income of farmhouses directly and indirectly	47
It will deplete groundwater resources	46
Treatment of solid and liquid wastes will become a daunting task	44
It will give rise to social, economic and ecological issues	43
It will raise GHG emission levels	41

It will hurt the income of farmhouses directly and indirectly, aver 47 respondents. It will deplete groundwater resources, argue 46 respondents. Treatment of solid and liquid wastes will become a daunting task, state 44 respondents. It will give rise to social, economic and ecological issues assert 43 respondents. It will raise GHG emission levels, cite 41 respondents.

#### 1.9.2 Mitigating the worst effects of urbanisation:

Urbanisation is something the emerging market economies (EMEs) should learn to live with given that the implications of urbanisation have an upside too. Hence the researcher sought to know from the respondents how the worst effects of urbanisation can be mitigated. Their replies to the query appear in the following Table.

**Table-2: Mitigating the worst effects of urbanisation:**

Mitigating measures	Number of respondents
Decline in waterbodies should be arrested	47
Rise in paved surfaces should be arrested	44
Management of water and water resources should be optimised	43
Decline in vegetation should be arrested	42

Decline in waterbodies should be arrested, according to 47 respondents, to mitigate the worst effects of urbanisation. Rise in paved surfaces should be arrested according to 44. Management of water and water resources should be optimised according to 43. Decline in vegetation should be arrested according to 42.

### 1.10 Analysis of primary data collected from the 50 urban planners:

In the following paragraphs, the primary data collected from the 50 urban planner respondents is analysed.

#### 1.10.1 Implications of urbanisation for Karnataka:

Urbanisation has its own implications for Karnataka going by the views of a cross-section of stakeholders. Hence the researcher sought to know from the respondents the implications of urbanisation for Karnataka. Their replies to the query appear in the following Table.

**Table-3: Implications of urbanisation for Karnataka:**

Implications	Number of respondents
It will hurt the income of farmhouses directly and indirectly	47
Farmhouses may try to convert themselves as commercial plots by gaming the system	47
Treatment of solid and liquid wastes will become a daunting task	45
It will give rise to social, economic and ecological issues	45
It will raise GHG emission levels	44
It will deplete groundwater resources	43

It will hurt the income of farmhouses directly and indirectly, aver 47 respondents. Farmhouses may try to convert themselves as commercial plots by gaming the system , according to 47 respondents. Treatment of solid and liquid wastes will become a daunting task, state 45 respondents. It will give rise to social, economic and ecological issues assert 45 respondents. It will raise GHG emission levels, cite 44 respondents. It will deplete groundwater resources, argue 43 respondents.

#### 1.10.2 Mitigating the worst effects of urbanisation:

Urbanisation is something the emerging market economies (EMEs) should learn to live with given that the implications of urbanisation have an upside too. Hence the researcher sought to know from the respondents how the worst effects of urbanisation can be mitigated. Their replies to the query appear in the following Table.

**Table-4: Mitigating the worst effects of urbanisation:**

Mitigating measures	Number of respondents
Decline in waterbodies should be arrested	47
Management of water and water resources should be optimised	47
Labour laws should be modified to hire urban migrants in a hassle-free manner	46
Rise in paved surfaces should be arrested	45
Decline in vegetation should be arrested	44
Urban migration should not be opposed blindly	43

Decline in waterbodies should be arrested, according to 47 respondents, to mitigate the worst effects of urbanisation. Management of water and water resources should be optimised, according to 47. Labour laws should be modified to hire urban migrants in a hassle-free manner, assert 46. Rise in paved surfaces should be arrested, maintain 45. Decline in vegetation should be arrested aver 44. Urban migration should not be opposed blindly, assert 43.

### 1.11. SUMMARY OF FINDINGS:

In the following paragraphs, a summarised version of the findings arrived at, by analysing the primary data furnished by respondents, is furnished:

#### 1.11.1. Farmhouse respondents:

1. It will hurt the income of farmhouses directly and indirectly, aver 47 respondents. It will deplete groundwater resources, argue 46 respondents. Treatment of solid and liquid wastes will become a daunting task, state 44 respondents. It will give rise to social, economic and ecological issues assert 43 respondents. It will raise GHG emission levels, cite 41 respondents.
2. Decline in waterbodies should be arrested, according to 47 respondents, to mitigate the worst effects of urbanisation. Rise in paved surfaces should be arrested according to 44. Management of water and water resources should be optimised according to 43. Decline in vegetation should be arrested according to 42.

#### 1.11.2. Urban planner respondents:

3. It will hurt the income of farmhouses directly and indirectly, aver 47 respondents. Farmhouses may try to convert themselves as commercial plots by gaming the system , according to 47 respondents. Treatment of solid and liquid wastes will become a daunting task, state 45 respondents. It will give rise to social, economic and ecological issues assert 45 respondents. It will raise GHG emission levels, cite 44 respondents. It will deplete groundwater resources, argue 43 respondents.
4. Decline in waterbodies should be arrested, according to 47 respondents, to mitigate the worst effects of urbanisation. Management of water and water resources should be optimised, according to 47. Labour laws should be modified to hire urban migrants in a hassle-free manner, assert 46. Rise in paved surfaces should be arrested, maintain 45. Decline in vegetation should be arrested aver 44. Urban migration should not be opposed blindly, assert 43.

### 1.12. CONCLUSIONS:

Conclusions are inferences / generalisations drawn from the findings and relate to hypotheses. They are answers to the research questions or the statements of acceptance or rejection of hypotheses. As explained already, this study proposes to test the following hypothesis:

“Treatment of solid and liquid wastes will become a daunting task upon urbanisation”

Hence  $H_0$  and  $H_1$  are as follows:

$H_0$ : "Treatment of solid and liquid wastes will not become a daunting task upon urbanisation"

$H_1$ : "Treatment of solid and liquid wastes will become a daunting task upon urbanisation".

On the basis of the primary data collected from the respondents, vide Tables: 1 and 3, a chi-square test was applied to ascertain the association, if any, between the variables. The following Table reveals the computation made using MS-Excel.

		Observed Values		
		Yes	No	Total
	Category			
	Farmhouse respondents	44	6	50
	Urban planners	45	5	50
	Total	89	11	100
		Expected Values		
		Yes	No	Total
	Category			
	Farmhouse respondents	44.5	5.5	50
	Urban planners	44.5	5.5	50
	Total	89	11	100
		Yes	No	
2	o-e	-0.5	0.5	
		0.5	-0.5	
	(o-e) <sup>2</sup>	0.25	0.25	
		0.25	0.25	
	((o-e) <sup>2</sup> )/e	0.0056	0.0455	
		0.0056	0.0455	
	CV	0.0112	0.0909	0.1021
	TV			3.8415
	p			0.9987

The calculated value of  $\chi^2$  is 0.1021, lower than the table value of 3.8415 for an alpha of 0.05 at one degree of freedom. Hence the null hypothesis is not rejected, and the research hypothesis is rejected.  $p=0.9987$  is the inverse of the one-tailed probability of the chi-squared distribution.

### 1.13. RECOMMENDATIONS:

The following are the researcher's recommendations:

1. Government and its regulatory agencies should ensure that the interests of farmhouses are not affected by rapid urbanisation. After all, farmhouses promote trees and greenery, apart from promoting the welfare of the promoter of the farmhouse financially.
2. Farmhouses also generate jobs for the unskilled and semi-skilled people thereby obviating the need for them to migrate to the nearest urban centre to eke out a living. In the process, farmhouses contribute their mite to the reduction of pressure on the urban infrastructure which is already bursting at the seams.
3. When an urban administration is forced to service more residents than it can possibly service, many items of infrastructure come under great pressure. For example, groundwater resources may dry up ahead of schedule and worse, the water table may descend alarmingly.
4. Treatment of solid and liquid wastes will get costlier and the water needed for the treatment will get scarcer too.
5. The gap in amenities enjoyed by the migrants and the well-settled urbanites will widen possibly leading to social and economic issues between the two sides. It may eventually snowball into a law and order issue too!

6. The pollution resulting from such gap will raise the GHG emission levels thereby aggravating the situation for the urban centre concerned
7. Urban realtors encroach on the banks of waterbodies which are eventually used as repositories of solid and liquid wastes discharged by the occupants of the residential / commercial units. In other words, urban waterbodies have to be protected from human encroachment by arresting if not eliminating the growth of such encroachments.
8. Labour laws should be modified and diluted to hire urban migrants in a hassle-free manner. This can be done by dangling fiscal carrots before the employers. Employers who provide the basic infrastructure to migrant labour should be rewarded in terms of income tax deduction or rebate.

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