



Local Government Quarterly

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*A Journal of the
All India Institute of Local Self-Government*

- ★ Exploring Enduring Migration Trend from West Africa to European Countries from the Dependency Perspective
- ★ India and Nepal: Socio-economic Relationships and Challenges
- ★ Insecurity as Threat to Nigeria's Political and Socio-economic Development: Need for Synergy
- ★ Challenges in Water Conservation in Rural Community

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Editorial

Agriculture security amidst climate risks

'According to the September El Niño-Southern Oscillation Outlook, El Niño is expected to stick around (with greater than a 95% chance) at least through January-March 2024' announced one international climate forecast. In simple terms, the phenomenon is the abnormal rise in sea surface temperatures in the Pacific Ocean. This usually results in deficient rainfall in India and its neighbourhoods. In 2023, the monsoon has been progressing under the influence of El Nino. The impacts of El Nino, mainly the suppressed monsoon and the resulting deficient rainfall have significant effects on our economy.

El Nino is one of the visible, felt outcomes of climate change and the resulting pain that it can cause. Assuming that the phenomenon does continue for an extended period as generally expected, the rainfall could be deficient in most parts of the country. Our met department has guided for a normal rainfall i.e., within the specified band around the Long Period Average (LPA) which is the scientific measurement indicator. However, we could expect uneven distribution spatially and over the four-month monsoon period.

Among the impacts, agriculture is usually a very significant one. Given that about 51 percent of the country's net sown area and about 40 percent of the food production is rain dependent, the outcomes of a rain deficient monsoon can be substantial, even grim. Rainfed agriculture in our country is characterized by low productivity levels and limited input usage. The vagaries of monsoon with wide variations across regions along with unpredictability can result in uncertainty in crop production and yields. Having said that, experts are of the view that these rainfed areas hold much promise and potential for improving production, productivity and yields since irrigated areas have more or less reached their full potential. This approach can meet the growing demand for food grains in the country resulting out of the growing population and rising incomes.

It is therefore necessary that we cushion our agriculture from the uncertainties of the monsoon while also beefing up irrigation facilities and thus reducing dependence on rainfall. There are several planks on which action is needed. Primarily there is need for water conservation by rainwater harvesting. It must be ensured that of the rainfall that we receive, much is captured, collected and stored in a sustainable manner so that it is not wasted in runoff, and becomes available for use after the monsoon. Recharging of natural water bodies and tube wells must be encouraged. Considering that about 80 percent of the freshwater resources of our country are consumed by agriculture, there is need to reform agricultural practices pertaining to water use as also the cropping pattern/crops choice. Drip irrigation in place of flood irrigation has significantly reduced water usage in many regions alongside giving other benefits. Governments are aggressively promoting drip irrigation through capital subsidies and other measures. Funding of these by corporates could be made eligible for CSR credit entitlements.

Prudent crop choice will have a very substantial outcome on various fronts. Wheat and rice currently form the major chunk of the food grain output in the country. Both are water intensive. Along with a drain on the irrigation facilities, rapid growth in the output of these crops also leads to the depletion of groundwater resources and thereby compromising the well-being of future generations. There is need for reform in crop choice in the quest for more sustainable agriculture. Millets, for example, are considered much suited for Indian conditions in many ways. Millets are very frugal when it comes to water consumption as a crop. Further these are very resilient to the vagaries of weather and can survive in deficient rainfall or even arid conditions. And most importantly, they are considered far superior from the nutrition standpoint. Therefore, while protecting farmers' incomes especially during rain deficient times, and meeting the food security of the nation, millets can also ensure the nutrition security of our countrymen. The use of millets is already growing with the growing realisation of its wide ranging benefits and also the determined promotion by the national and sub-national governments. The nomenclature of 'Shree Ann' enables raise the standing of millets and elevates it to a high status. Industry including packaged food companies is pitching in by way of innovations and varied products such as millets based biscuits and snacks which can go to increasing their appeal among the younger generation. The wide range of millets presents opportunities for creating many end products. While the Green Revolution enabled the country's food security, the push to popularise millets will enable its nutrition security. There could be several other crop categories which can add to sustainable agriculture in our country by frugal use of water, fertilisers, etc. and also increasing the nutrition and well-being of our people. Above all, such crops could protect our farmers from the uncertainties of monsoon, and protect their livelihoods all round the year.

Exploring Enduring Migration Trend from West Africa to European Countries from the Dependency Perspective

Osasere Greg Igbinomwanhia, Comfort Osoyegbe Omoruyi

Abstract

Over the years, African political and development scholars, writers have blamed the Europeans for the underdevelopment and poverty of Africans that has culminated to a growing trend of migration from Africa and Nigeria particularly to European countries in search of greener pastures. This trend has necessitated the evocation of Dependency Theory in explaining Africans cum Nigeria's underdevelopment, poverty, Bad leadership and governance dependency situation. Hence Africa's plight has been linked to two categories of factors: internal and external. The internal factors, Nnadozie (2019) said fan the ember of the external factors and therefore require and deserve more attention hence the connivance of African elites with the European elites to impoverish the continents. Recently there has been a clarion call to a paradigm shift from the pseudo-intellectualism of the dependency

theorist made manifest in the Walter Rodney's "How Europe underdeveloped Africa" to Igwe and Ghanaian Chronicles' How Africa underdeveloped Africa" and finally, Ope-Agbe's "How Nigeria underdeveloped Nigeria"

Key Words

Dependency, Underdevelopment, Poverty, Bad leadership and Governance, Migration.

Introduction

There seems to be some agreement that there is a correlation between existing global social relations and the enduring cases of certain social challenges in third world countries. One of such third world problems is unusual large scale migration (and in its worst form - Human trafficking) which is argued to have its very deep roots in the consequences of global inequality among nations; especially

between the poor countries of the south and those of the rich countries of the north (Igbinomwanhia, 2021). The dependency perspective is one underdevelopment theory that could be rightly identified to capture and best explain the essence of the referred scenario.

Immigration is the process of moving to a new country or region with the intention of staying and living there. People may choose to immigrate for a variety of reasons such as employment opportunities, to escape a violent conflict, environmental factors, and educational purposes or to reunite with family. Some migration is voluntary; others may be forced as the case of the trans-Atlantic slave trade of the 15th-19th century (Rodney, 1972). Some migrations are also local while others are international as the case of recent trend where many people get involved in trans-national migration mostly from Africa to Europe and the Americas in large numbers.

Nigeria is a country in West Africa with a population of 212,038,975 as of August 2021 (National Population Commission (NPC) 2022). Like other countries, Nigeria has experienced migration of people across and within its borders. During the colonial period, the country recorded massive internal migration as people moved from villages and towns into the cities. From the post-colonial period until the 1970s,

movement in Nigeria mainly remained within this scope. Although Nigerians also ventured outside the country to other West African Countries, the United Kingdom and the United States, the majority had an ultimate goal of returning.

In the 1970s although demands for labour grew in developed countries due to economic expansion, Nigeria also experienced an oil boom that raised the standard of living and improved the economy. As a result of this, Nigerians did not have much reason to permanently migrate from the country, therefore, most migrants travelled on temporary visas. For instance, Nigerian students and some other citizens sometimes go on vacations with temporary visas although there were a few exceptions as some travelled for educational purposes and settlement. During this period, there were enough scholarships for students to venture out and acquire more skills and willingly return to the country. The value of the Nigerian Naira currency to dollar was less than 75 kobo to 1 dollar and almost equivalent to the British Pound. Owing to this, only few Nigerians valued emigration over living within the country. Apart from that, domestic working conditions were attractive, internationally competitive and the environment was relatively safe. By the 1980s however, the heavy dependency on petroleum, with other factors like the introduction

of the Structural Adjustment Programme plunged the Nigerian economy into recession. These coupled with political instability adversely affected livelihood (Attoh, 2009). With attraction of various job opportunities and better living conditions outside of the Nigerian border, many Nigerians saw the need to move abroad notably to European countries. From this point onwards, international migration of the Nigerian citizens increased and people already outside the country changed their status from temporary to permanent residents.

In the 21st century, international migration continues to be major phenomenon in Nigeria. Although Nigerians sometimes travel abroad on short-term basis for leisure, work and trading activities; however other factors such as the current pitiable state of the Nigerian social, economic and political sphere have heightened migration of Nigerians to other countries.

Presently, Nigeria remains a developing country that is faced with mounting systemic issues like unemployment, corruption, poor leadership, infrastructure decay, non-functional industries, insecurities, inflation and high poverty rate among other issues. These impact the educational system, work, businesses and overall quality of life. Despite

available resources such as a growing labour force and young population, poor management has reduced the productivity of the Nigerian economy. These trends have exacerbated the outward flow of Nigerians especially professionals, entrepreneurs and students to other countries, as often argued by scholars (Aremu, 2020; Okonofua et al, 2004; Weitzer, 2011). According to the Organisation for Economic Co-operation and Development (OCED), the largest population of Nigerian migrants in OCED countries were employed in the healthcare system, followed by the real estate and wholesale sectors. Likewise, a large percentage of Nigerian physicians work in the United States and the United Kingdom. The United Kingdom's nursing and Midwifery Council registers Nigeria as one of the major source countries for admitting nurses and midwives. Between 2002 and 2004 about 500 nurses legally emigrated, overall between 2001 and 2006 about 21,000 health workers had emigrated (even though some of these migrants were gainfully employed in Nigeria prior to migration). Many Nigerians also enroll in universities abroad.

As can be seen in the table below, by 2015, over a million Nigerians resided across various continents and this has increased in more recent years with more and more people leaving the country on a daily basis.

Data of Nigerian Emigrants in 2015

DESTINATION	MALE	FEMALE	TOTAL
Asia	24,403	12,789	37,192
Europe	209,629	188,848	398,477
Australia	3,812	2,570	6,382
Other African Countries	219,777	155,658	375,435
North America	134,465	137,376	271,841
South America	1,204	407	1,611
Latin America	1,911	796	2,707
Total	595,201	498,444	1,093,645

Source: Nigeria Bureau of Statistics, 2016

The number of Nigerians migrating and living in other countries especially in Europe continues to increase every hour. This is now commonly referred to as the 'Jakpa' syndrome. However, data on increase are more available in their country of residency. It is worthy to also note that while many Nigerians reside in Europe and North America, a large number also live within Sub-Saharan Africa as seen in the table above.

It is also pertinent to mention that migration out of the country to mostly European countries is often a mix of both voluntary, forced and illegal which is thus an important discourse as Nigerians continue to spread across continents of the world. In all of this scholars argue that the reality of the escalated case of migration from Nigeria (West Africa) to European countries remains shrouded in complexity whether in terms of explaining contributing factors or in

understanding circumstances surrounding how they got to their destination or whether they are exploited or not.

Rationale for migration and its impacts

From the late 20th century and most especially in the 21st century, socio-economic and political instability has hampered development. This development is a major factor that has fostered migration from Nigeria (Attah, 2009). Many view migrations out of the country as an achievement and a thing of pride (Dokpesi, 2015; Okonofua et al 2004). Annually, the Country produces large numbers of graduates from tertiary institutions; however the labour market is unable to absorb this surplus labour force contributing to a high rate of unemployment in the country. Between January 2017 and January 2021, the unemployment rate of active job seekers increased from 13.3% to 33.3% (NBS, 2021). Unemployment could be argued to largely contribute to the increase in crime and insecurity in Nigeria because of the inherent correlation between the two social conditions. Many migrants or potential migrants leaving Nigeria for overseas destinations often say that one of the reasons they choose to travel is due to the problems of unemployment and insecurity.

In Nigeria, poverty, unemployment, population growth, inflation, the low value of our naira currency, the lack of basic health and education, public debt, insecurity, poor infrastructures, human rights abuses, corruption, conflict and discrimination are seen as push factors for international migration. In the same vein the prospect of a better wage, improved living standards, safety, political freedom, reunification with family and friends, and personal development are argued to be pull factors that attract Nigerians to other countries.

The large number of migrants especially among the highly skilled represents a scaring high case of massive brain drain. The skills needed to contribute to Nigeria's development now go instead to the new country of residence. The health sector in Nigeria for instance, is now imminently faced with a collapse. With many medical practitioners venturing out of the country due to factors like inadequate medical facilities and poor working conditions and better offers abroad, the development of the country's medical system is seriously threatened,

Dependency theory and migration to European countries by Nigerians

Dependency theory holds 'that the condition of underdevelopment is precisely the result of the incorporation

of the third world economies into the capitalist world system which is dominated by the West and North America" (Randall and Theobald 1998, 120), hence in development studies dependency implies a situation in which a particular country or region relies on another for support, "survival" and growth. The third world countries are the canonically underdeveloped countries of Asia, Africa, Oceania and Latin America considered as an entity with common characteristics such as poverty, high birth rates, and economic dependence on the advanced countries. The term therefore implies that the third world is exploited and its destiny is a revolutionary one. Distinctively, the underdevelopment of the third world is marked by a number of common traits, distorted and highly dependent economics devoted to producing primary products for the developed world and to provide markets for their finished goods; traditional, rural social structures, high population growth (Woldu, 2000).

The winds of change of the late 50s and 60s had liberated all the third world, including Africa and Nigeria, thus rendering whatever differences in the rate of development a peculiarity to the specific country concerned. In the Nigerian perspective, to answer the question correctly, is it environment or is it in our nature that we failed or refused to develop? This

question is necessary as it has been rendered impossible by the current climate of pseudo-intellectualism fueled by some kind of pseudo anti-colonialism now turned into anti-imperialism, which forecloses all discussions by insisting that “we are on our own”. This posturing had not only dissuaded us from asking this basic question but had indeed put thick blinkers on our eyes that we cannot see reality, even though we are living in the thick of our unpalatable reality - underdevelopment (Kyari, 2008).

The Dependency Theory focused on individual Nations, their role as suppliers of raw materials, cheap labour and markets for expensive manufactured goods from industrialized countries. The unequal exchange relation between developed and developing countries was viewed as contributing to poor economic growth. Dependency is an historical condition which shapes a certain structure of the world economy such that it favours some countries to the detriment of others and limits the development possibilities of the subordinate economics (Igbinomwanhia, 2021) a situation in which the economy of a certain group of countries is conditioned by the development and expansion of another economy to which their own is subjected (Dos Santos, 1971).

There are three common features to these definitions which most

dependency theorists share. First, dependency characterises the international system as comprised of two sets of state, variously described as dominant/dependent, centre/periphery or metropolitan/satellites. The dominant States are the advanced industrial nations in the Organisation of Economic Cooperation and Development (OECD). The dependent states are those states of Latin America, Asia and Africa which have low per capita GNPs and which rely heavily on the export of a single commodity for foreign exchange earnings and the importation of variety of goods from the Western developed dominant States.

Second, both definitions have in common the assumption that external forces are of singular importance to the economic activities within the dependent States. These external forces include multinational corporations, international commodity market, foreign assistance, communication and any other means by which the advanced industrialized countries can represent their economic interests abroad.

Third, the definitions of dependency all indicates that the relations between dominant and dependent states are dynamic because the interactions between the two sets of states tends to not only reinforce but also intensify the unequal patterns. Simply put, Dependency Theory

attempts to explain the present underdeveloped state of many nations in the world by examining the patterns of interactions among nations and by arguing that inequality among nations is an intrinsic part of those interactions.

The concept of dependency as an explanation for economic underdevelopment has been developed most prominently by Frank (1966, 1979) and Samir Amin (1974). For Frank, the concepts of development and underdevelopment have meaning only when applied to nations within the capitalist world economy. Frank envisions that world economy has been divided into two major components, metropolises and satellites. These concepts are basically equivalent to Wallerstein's (1974) concept of core and periphery. The flow of economic surplus in the world economy is from the satellite (or periphery) to the metropolis (or core), and the world economy is organized to make this happen. The underdeveloped nations therefore have become and remain underdeveloped because they are economically dominated by developed capitalist nations that have continually been extracting wealth from them.

Frank (1996) has called this process the development of underdevelopment. In this view, the development of the rich nations and the underdevelopment of the poor ones are but two sides of the same coin as

underdevelopment of some nations has made development for other nations possible and the development of other nations made the underdevelopment of other nations possible. The primary victims of the process are the vast majority of peasants and urban workers of the underdeveloped world itself. While the members of the developed nations do benefit from these since their standard of living is raised substantially, the greatest benefits go to capitalist in the metropolitan countries as well as to the agricultural and industrial elites of the satellites countries, hence the latter have close political ties to the metropolitan elites and play a crucial role in retaining, maintaining and sustaining the situation of economic dependency of their states. They are blindfolded to the stark reality of the lopsidedness in their relationship with the metropolitan capitalists leading to Samir Amin's (1974) articulated and disarticulated economies. According to him, the developed nations have highly articulated economies, or ones whose multiple sectors closely interrelate such that development in any one sector is commonly able to stimulate development in the other sectors. This is not the case of Nigeria for example whose economy is primarily involved in the production of raw materials for export to the developed countries.

The concept of dependency can be understood more thoroughly by

examining its various forms. Theotonio Dos Santos (1970) has suggested three historical forms of dependency through which the now underdeveloped nations have passed. The first of these he calls colonial dependency. Under this form of dependency, which began as early as the sixteenth century in some parts of the world, European capitalist powers colonized pre-capitalist regions and established a monopoly over land, mines and labour. Surplus wealth was extracted from those regions by means of European control over trade relations. The economic character of these colonized regions was powerfully shaped by their subordination to European nations.

Second is financial industrial dependency. This form of dependency began in the late nineteenth Century. It was characterized by the expansion of European industrial capital (as opposed to the earlier merchant capital) into the backward regions of the world. This form of dependency was part and parcel of the monopoly phase of capitalist development. Financial industrial dependency involved heavy investment of big capitalists in the world's backward region mainly for the purpose of producing raw materials to be exported back to the core nations.

The most recent forms of dependency are termed by Dos Santos

as the new dependency. This kind of dependency is a post-world war II phenomenon and involves the emergence of trans-national cooperations that engaged in extensive economic investment in third world countries. In addition to the concern about this forms of dependency, there is the question of how economic dependency creates and sustains underdevelopment. Dependency theorists often disagree with respect to the particular mechanisms whereby this occurs. Several different mechanisms through which dependency induces underdevelopment have been proposed by various theorists and more than one is sometimes proposed even by the same theorist. Four possible dependency mechanisms are most frequently suggested in the current dependency literature (Chase-Dunm, 1975; Delacroix and Ragin, 1981; Barret and Whyte, 1982). Exploitation through repartition; elite complicity; structural distortion; and market vulnerability.

In the final analysis, Walter Rodney averred that the question as to who and what is responsible for Africa's underdevelopment can be answered at two levels. Firstly, the answer is that the operation of the imperialist system bears major responsibility from African economic retardation by draining African wealth and by making it impossible to develop more rapidly

the resources of the continent. Secondly, one has to deal with those who manipulate the system and those who are either agents or unwitting accomplices of the said system. The capitalist nations or Western Europe were the ones who actively extended their exploitation from inside Europe to all over Africa.

In recent times, they were joined and to some extent replaced by capitalists from the United States and for many years now even the workers of those metropolitan countries have benefitted from the exploitation and underdevelopment of Africa. None of these remarks is intended to remove the intimate responsibility for development from the shoulders of Africans. Not only are they accomplices inside the imperialist system, but every African has a responsibility to understand the system and work for its overthrow (Rodney, 1972).

There is no gainsaying the fact that the capitalist metropolitan Western countries have largely conditioned the developing African economy and psychology (Nigerian) into believing and accepting that anything Western is superior and the best. The West now seems to define our value system, our attitudes, perception and conception; languages have been introduced to the detriment of indigenous languages, patterns of dressing as social cultural

values, demystifying or tests and standard of values and now being measured by Western parameters which invariably has translated into dependency that perpetually attracts Africans and Nigerians to migrate to Western hemisphere.

Because the whole world has been globalized, African countries including Nigeria are 'sattelised'. The owners of global capital and industries are in the West by implication African countries like Nigeria and their people have no opportunity to match politically, economically, socially and psychologically.

Scholars like Achebe, (1983), and Ayittey (1979) however debated that Dependency Theory should stop blaming the West for the social quagmire/malaise leading continuing widespread migration in West Africa and Nigeria particularly but should fix its internal challenges. Their works lay bare the role of African leaders in ensuring and exacerbating underdevelopment, poverty, poor governance that has culminated in their citizens engaging in widespread and sometimes dangerous migration to Europe in search of a better life. By implication, Nigerian leaders hide behind this pseudo-intellectualism to exploit Nigerians and have the whites blamed for their woes since independence in 1960. Since independence researchers argue, that

the level of exploitation of the Nigerian people, their land and resources have been remorseless and horrendous and believed this was caused by leadership defect. The people have not realized this due to false consciousness endangered by tradition and culture, poverty, ignorance and illiteracy as reflected in Marx grand theories (Karl Marx, 1978).

Conclusion

Indeed, the central factors sustaining underdevelopment, poverty and all manner of social squalor that has precipitated rising migration of human and material resources from Nigeria to Western countries in search of the golden fleece is seen as both internal and externally generated. But this paper is of the view that external forces as occasioned by the unequal global relations and the sustenance of the dependency status of developing countries like Nigeria are the foundational root cause of the problem. In essence, the failure of Nigeria's leadership and institutional system may be a contributory factor, but activities and extension of sphere of influence by the capitalist owners of global resources as represented by the West are more fundamental.

African countries have become the personal estates of official gangs whose avowed aim is not development of their countries but rather the

siphoning off of national resources into foreign banks. This is one way how our African leadership has contributed to the underdevelopment of Africa.

Local elites who are willing tools in the hands of the agents of the dominant foreign powers have helped to complicate the structural conditions within which much of the local population groans and struggles to survive. These same local elites (politicians and dishonest businessmen) waste the wealth of the nation by purchasing foreign and exotic goods and services for themselves, friends and cronies. A large chunk of that wealth was simply stolen through inflated contracts, frauds and other dubious methods. Apart from direct stealing of public funds there is also the adoption of corrupted concept of development and development projects and programmes by government in Nigeria. Hence advertised investment and public funds are often for pecuniary reasons directed by our leaders as white elephant projects and programmes that do not yield dividends or create employment for the people as private interest overrides public interest. Colossal sums of public money have been lost in this manner.

Nigeria with its oil wealth is different from many other neo-colonial countries as the majority of the ruling elites do not really care about

developing the manufacturing or agricultural sectors of the economy as the only source of wealth in Nigeria is the daily inflow of 30 million petrodollars into offshore bank accounts. This is the 'pot of gold' over which the elites fight, and as a result, corrupt and sharp practices are the easiest way to make money in Nigeria, certainly better than industrial production or normal trade (Salimu 1998). The London times reported one estimate that since the early 1970s Nigerian leaders have amassed personal fortunes totally of 17 billion dollars in foreign, mainly, Swiss and Lebanese Banks.

Recommendations

Though external control by foreign powers and the reality of global inequality is a core contributing factor to the increasing migration abroad by Nigerians, Africans will need to fix its problems internally instead of dwelling in the role of the West. No doubt the Europeans exploited Africans leaving behind and creating a dependent economy and mentality but it's high time African/Nigerian leaders over look this and looked inwards. Africans and Nigerians in particular have to re-orientate and deliver themselves from this colonial mentality that anything outside the shores of their country, anything European is the best; we seem to have lost faith in ourselves. However, the

prevailing circumstances in which most African countries and Nigeria have been conditioned or found themselves have to be dismantled.

Again, in order to check the continuous migration of Nigerians abroad, African (Nigerian) leaders need to invest in their home countries. This is necessary because without investment, unemployment, poverty, hunger and starvation loom large and underdevelopment will soar higher. This will invariably trigger and sustain the tendency and urge for Africans (Nigerians) to keep migrating to Western countries in droves as is presently experienced.

A total revamp of African political landscape is also advocated. Desirable changes in the direction of true democracy in the politics and leadership style of Africa/Nigeria are needed such that mediocrity will give way for meritocracy. Democratic good governance will ensure economic prosperity for all. And at the same time this will ensure a peaceful, strong and virile economy based on harmonious coexistence where tolerance will be the watchword. This can help ensure security of lives and property and will reduce the tendency of African/Nigerians to migrate to European countries.

The billions of dollars stacked away in foreign banks were supposed

to be used to establish companies, provide for employment opportunities, provide essential amenities that will make life worth living. Without the availability of these resources in African soil, Africa can never develop. Therefore, if Africans must develop, they must develop themselves by investing all their monies in their land. This is one major way to achieve the internal growth that Andre Gunder Frank proposed.

Further research work can be done to understand the inherent issues in this subject matter under review. For instance, more academic investigation can be done on how global inequality coupled with the impact of dependency relationships between the North and South can be explored as a way of understanding recent growing trend of the flow of human and material resources towards the developed West.

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India and Nepal: Socio-economic Relationships and Challenges

M. V. Vaithilingam, Usha Iyer

Abstract

Nepal shares a border of over 1850 km with five Indian states - Sikkim, West Bengal, Bihar, Uttar Pradesh and Uttarakhand. Nepalese citizens avail facilities and opportunities at par with Indian citizens in accordance with the provisions of the India-Nepal Treaty of Peace and Friendship of 1950 that forms the bedrock of the special relations that exist between India and Nepal. Both the countries have an established and cohesive relationship with each other in terms of socio-political, economic, cultural and religious ties that have spanned across decades. These two sovereign nations have open borders and have fostered an environment of unrestricted movement, allowing the people from both countries to establish intense connections. This research paper examines the socio-economic development of India and Nepal through indicators such as GDP, GDP per capita, growth rate, literacy rate,

life expectancy, exports, imports and trade balance. The bi-variate analysis using online data from World Bank reveals a significant increase in economic growth for both the countries from 2018-2022, except for a decline in the year 2020 due to COVID-19 pandemic. The statistics show that annual percentage increase in literacy rate has been relatively higher for Nepal than that of India since 1991. There is no significant increase in life expectancy for both the countries during 2018-2023. The trade balance for India has increased by about 61% more for India (82.18%) as compared to Nepal (20.89%) during 2021-2022. This paper examines the challenges in the bilateral relations between the two countries. It concludes that improving trade, transport, communication and economic activities through air, road, rail and waterways between the two countries will further promote their inter-dependence and socio-economic development.

Keywords: India, Nepal, Economic co-operation, Socio-economic development

Note: This paper was presented in the Indo-Nepal Friendship Summit 2023 on Globalisation of Socio-economic Development at Kathmandu, Nepal, 26-30 October 2023.

1. Introduction

India-Nepal share a close and multifaceted relationship based on mutual cooperation and friendship, sharing a border of over 1850 km with five Indian states - Sikkim, West Bengal, Bihar, Uttar Pradesh and Uttarakhand. These two sovereign nations have open borders and have fostered an environment of unrestricted movement, allowing the people from both countries to establish intense connections. Nepalese citizens avail facilities and opportunities at par with Indian citizens in accordance with the provisions of the India-Nepal Treaty of Peace and Friendship of 1950 that forms the bedrock of the special relations that exist between India and Nepal. Nearly 8 million Nepalese citizens live and work in India. (Embassy of India, 2020). Both the countries have an established and cohesive relationship with each other in terms of socio-political, economic, cultural and religious ties that have spanned across decades. In order to facilitate bilateral discussions India &

Nepal have established several dialogue mechanisms, including the India-Nepal Joint Commission.

International relations and cooperation between countries promote travel, trade, business and tourism. The pooling of resources, sharing information to face global issues and immigration provide people with opportunities for their livelihood and advances human culture. This research paper examines the socio-economic development of India and Nepal using data from the World Bank on various socio-economic indicators with the help of bi-variate analysis. The emerging challenges in the bilateral relations between the two countries necessitate improvements in trade, transport, communication and economic activities for promoting their interdependence and socio-economic development.

2. Literature Review

A study by Mukharji (2006) states that the 1950 Indo-Nepal Treaty of Peace and Friendship underlined independent India's affirmation of Nepali sovereignty. Nepal gained substantially as national treatment was granted to the citizens of each other as both the countries were put on par. Nepalese nationals were given protection from unrestricted competition.

A study by Karun and Hari (2020) reveals that India and Nepal enjoy excellent bilateral ties. There are close linguistic, marital, religious and cultural ties at people-to-people level between Indians and Nepalese.

The Nepalese Citizenship Act of 1952 granted Indians the right to immigrate to Nepal and acquire Nepalese citizenship without any difficulty. The Treaty of Trade and Commerce between the two countries was ratified in October 1950, wherein India acknowledged Nepal's right to import and export commodities through the Indian territories and ports. Preferential customs and transit duties on Nepalese goods entering or passing through India were discontinued (Savada, 1991).

The Embassy of India (2020) on the India Nepal Bilateral relations says that India and Nepal have wide-ranging co-operation in the defence sector. India has been assisting the Nepal Army in its modernization by supplying equipment and providing training. Assistance during disasters, joint military exercises, adventure activities and bilateral visits are other aspects of India's defence cooperation with Nepal. Since 1950 India and Nepal have been awarding each other's Army Chief with honorary rank of General in recognition of the mutual harmonious relationship between the two armies. The Gorkha regiments of the Indian

Army are raised partly by recruitment from hill districts of Nepal. Currently, about 32000 Gorkha soldiers from Nepal are serving Indian Army.

In terms of religious and cultural relationship between India and Nepal, Pandey (2021) says that Nepal is a Hindu majority state with religious, cultural, economic, matrimonial, and linguistic relations with India. Thousands of Nepalese have married in India and vice versa which gives the bilateral ties a unique feature. India and Nepal share an open border where visas and passports are not necessary and that has facilitated Nepalese and Indians to live and work in each other's countries.

The cooperation between India and Nepal regarding water resources, energy, trade, and infrastructure is also important in the bilateral relationship. India & Nepal have agreements for power exchange and transmission, and India currently supplies around 600 MW of power to Nepal. India has been actively involved in supporting Nepal's development by aiding in various sectors such as infrastructure, health, water resources, education, and rural development. They have collaborated on the development of border infrastructure, including roads and rail links. Indian investment in Nepal is significant, with Indian companies being major investors in various sectors (Next IAS Content Team, 2023).

As far as educational and cultural aspects are concerned, Next IAS Content Team (2023) mentions that India's contribution to human resource development in Nepal is noteworthy, with thousands of scholarships and seats provided annually to Nepalese nationals for various courses in India & Nepal. Cultural exchanges and initiatives to promote people-to-people contacts are an integral part of the bilateral relationship. Several agreements have been signed between Indian and Nepalese cultural and media organizations.

3. Objectives

This paper has the major objectives such as (a) To examine the progress of socio-economic development of India and Nepal during 2018-2022; and (b) To discuss the challenges in Indo-Nepal bilateral relations and explore the way forward to strengthen the relationship between both the countries.

4. Data and Method

This paper uses the data from the World Bank available online for international comparisons. The indicators used in this study are: Gross domestic product (GDP), GDP per capita, GDP growth rate, adult literacy rate (7 years and above) and its growth rate, life expectancy and its growth rate, exports, imports, trade balance and percentage of GDP. A bivariate

analysis is used to realize the objectives of the study. The trade summary analysis reveals the significance of their bilateral relations.

5.0 Discussion

The variables that are considered for the discussion in the analysis are Gross Domestic Product, literacy rate, life expectancy, exports, imports and trade balance.

5.1 Gross Domestic Product

GDP growth and GDP per capita are important indicators to measure the economic progress of a country or region. There has been a rise in GDP, GDP Per capita, and Percentage growth rate of GDP for both India and Nepal during the period 2018 to 2022 but there is a fall in all the three indicators for both the nations in 2020 due to COVID-19 pandemic. The GDP of India (3,385.09 Billion US\$) is higher than that of Nepal (40.83 Billion US\$) in 2022. The GDP per capita is also higher for India (2389 US\$) than that of Nepal (1337 US\$) in 2022. The GDP growth rate is higher for India (7.0%) than Nepal (5.6%) in 2022. India's economic growth for 2022 shows an increase by 7.45% over 2021, a 17.92% increase in 2021 over 2020 but a decline by 5.78% in 2020 over 2019 and an increase by 4.91% in 2019 over 2018. India being a vast and more populated country, the impact of COVID-19 pandemic has been more

severe posing fresh challenges to the Indian economy on both demand and supply side affecting economic growth. Nepal's economic growth for 2022 shows an increase by 10.57% over 2021, an increase by 10.44% in 2021 over 2020, but a decline by 2.2% in 2020 over 2019 and an increase by 3.25% in 2019 over 2018 (Table 1). The COVID-19 pandemic and the resulting lockdown have hit hard Nepal's tourism, entertainment and transport sectors disturbing the projected economic growth.

5.2 Adult literacy

Adult literacy rate is the percentage of people aged 15 and above who can both read and write with understanding of a short simple statement about their everyday life. It is significant to note that though the literacy rate is higher for India than Nepal, the growth rate of literacy is higher for Nepal than India in 2018, 2011, 2001 and 1991. The literacy rate for India in 2018 was 74.37%, an increase of 5.07 percentage points over 2011, when it was 69.30%. The rate for 2011 was an increase of 8.29 percentage points over 2001. The 2001 Literacy (61.01) was an increase of 12.79 percentage points over 1991 (48.22). Regarding Nepal, the literacy rate for 2018 was 67.91% a 8.28 percentage points increase from 2011. During 2011 it had increased to 59.63, an increase over 2001 (48.61) (Table 2). Adult literacy is an important

indicator to measure the social progress of a country. Literacy helps to improve lives of people through enhancing capabilities which in turn reduces poverty and increases work participation with positive effects on health and sustainable development.

5.3 Life expectancy

Life expectancy is the average number of years a new born is expected to live. It is an indicator of the overall health of the population. Access to quality healthcare, advancements in medical technology, improvements in disease prevention, diagnosis, and treatment play a significant role in increasing life expectancy. Table 3 shows that life expectancy is higher for Nepal (71.74) as compared to that of India (70.42) in 2023. It has increased in both the countries during 2018-2023 though marginally. Table 3 plots the Life Expectancy for both India and Nepal for each year between 2018 and 2023.

5.4 Exports, Imports and Trade balance

External balance on goods and services equals exports of goods and services minus imports of goods and services. The data on exports and imports for both India and Nepal shows an increasing trend during 2018-2022, except in 2020 due to COVID-19 pandemic. The level of exports, imports and trade balance were higher

for India as compared to Nepal during the same period. India's trade balance for 2022 was \$-151.46B, a 82.18% increase from 2021, in 2021 it was \$-83.13B, a 69.53% increase from 2020, for 2020 it was \$-10.52B, a 85.61% decline from 2019; for 2019 was \$-73.07B, a 28.13% decline from 2018. Nepal trade balance for 2022 was \$-14.65B, a 20.89% increase from 2021, for 2021 it was \$-12.12B, a 32.71% increase from 2020, for 2020 it was \$-9.13B, a 20.73% decline from 2019 and for 2019 it was \$-11.52B, a 5.99% increase from 2018 (Table 4).

5.5 Trade Summary

Nepal and India share a long history of trade and commercial exchanges. India is Nepal's largest trade partner. Nepal-India Treaty of Trade (2009), Agreement of Cooperation to Control Unauthorized Trade (2009), Treaty of Transit (1999), and Rail Services Agreement (2004) provide for the bilateral mechanism for trade and transit. Under the Treaty of Trade, duty-free access into the Indian market for all Nepali-manufactured goods is provided on a non-reciprocal basis, except a short negative list (including cigarettes, alcohol and cosmetics). Generally, bilateral trade takes place in Indian rupees. Nepal's central bank also maintains a list of items that can be imported from India in dollars using a Letter of Credit. The Indian rupee is convertible in all banks and financial institutions in Nepal. The exchange

rate has been maintained at NRs. 1.6 per Indian Rupee (Embassy of Nepal, New Delhi). The figures in Table 5 reveal that the number of partners, products, exports and imports in US Million \$ are higher for India as compared to that of Nepal.

6.0 Conclusions

The bivariate analysis using online data from World Bank reveals a significant increase in economic growth for both the countries from 2018-2022, except for a decline in the year 2020 due to COVID-19 pandemic. The statistics show that annual percentage increase in literacy rate has been relatively higher for Nepal than that of India since 1991 except during 2011-18. There is no significant increase in life expectancy for both the countries during 2018-2023. The trade balance for India has increased by about 61 % as compared to Nepal during 2021-2022.

7.0 Challenges in India-Nepal Relationship

There are various challenges for both the countries to continue their smooth relationship for their constructive socio-economic development in future. (1) Issues with Peace and Friendship Treaty- The 1950 Treaty of Peace and Friendship between India and Nepal guaranteed Nepali citizens free movement across the border and the right to work in India.

However, this treaty is viewed as a sign of unequal relationship; (2) Territorial Disputes- One of the main challenges in Indo-Nepal ties is the Kalpani boundary issue which has remained unresolved. Nepal claims these territories as part of its own, while India inherited them from British colonial rule; (3) Chinese Interference- In recent years, China has been stepping in Nepal with investments, aid and loans. China's involvement in Nepal's infrastructure projects through its Belt and Road Initiative could adversely affect Nepal's role as a buffer state between India and China; (4) Demonetization Irritant- India's refusal to accept demonetized bills from the Nepal Rastra Bank after demonetization in November 2016, has affected India's image in Nepal; (5) Security threat- The poorly guarded border between India and Nepal allows terrorist groups to exploit it for smuggling weapons, ammunition, trained members and fake currency, which poses a significant security risk to India; (6) Trust Deficit- The trust between India and Nepal has weakened over time due to perceived slow implementation of projects by India. Some Nepalese ethnic groups feel that India interferes too much in Nepal's politics and undermines their political independence.

8.0 Way Forward

India needs to be a sensitive and generous partner for the

neighbourhood first policy to take root.

(a) Sensitizing towards Nepal- India should engage more proactively with Nepal in terms of people to people engagement, bureaucratic engagement as well as political interactions. It should maintain the policy of keeping away from the internal affairs of Nepal but guide Nepal in the spirit of friendship. (b) Resolving water issues: International law on transboundary water disputes needs to be negotiated diplomatically to explore what is feasible; (c) Strengthening Economic Ties - India can build trust in Nepal through power trade agreement. By buying hydropower from Nepal India can manage peak demand and also save money. (d) Investments - India could increase its investments in Nepal and focus on completing projects more quickly. Projects that benefit the local people will help create a positive image of India. Nepal should promote more Indian investments taking advantage of the Bilateral Investment Promotion and Protection Agreement (BIPPA) signed between India and Nepal. (e) Countering China - Given China's influence, the government should quickly address challenges hindering economic cooperation and foster growth for both countries. (f) Manage border dispute - Both parties should explore realistic solutions for the successful boundary dispute resolution. India and Nepal need to extend their mutual help in developing economic avenues to cater to the

modern needs of the people. Both countries need to explore realistic approach to arrive at amenable solutions with mutual understanding and collective effort. The Indian government could engage constructively with the new leadership in Nepal and work towards enhancing cooperation in various areas. This will benefit long-term interests of both the nations.

The involvement of multidimensional partnership will help the economic development of both countries. Improving trade, transport, communication and economic activities through air, road, rail and waterways between the two countries will further promote their inter-dependence and socio-economic development. India understands Nepal's geopolitical importance for

defence and security purposes. It also recognises the advantages it has in Nepal in relation to China in terms of historical, economic and cultural linkages. India will have substantial control over the situation with Nepal willing to make amends which could turn in its favour if it increases its engagements with Nepal. The dissemination of the ideology of Buddhism in both the countries can be a potent factor binding India and Nepal. The Sanatan culture, Sanskrit and revered temples such as Char Dhams (Four Dhams) in India, Lord Pashupatinath and Muktinath in Nepal, Yoga, Kumbh Mela, Shiv Ratri etc. are embodiments of our common heritage. No other country can replace India inside Nepal if the common religious, cultural and linguistic aspects are stressed and given priority (Pandey 2021).

Table 1
Gross Domestic Product (GDP), GDP per capita and GDP Growth rate for India and Nepal, 2018-2022

Year	GDP (Billions of US\$)		GDP Per capita (US\$)		GDP Growth (%)	
	India	Nepal	India	Nepal	India	Nepal
2022	3,385.09	40.83	2,389	1,337	7.0	5.6
2021	3,150.31	36.92	2,238	1,229	9.0	4.8
2020	2,671.60	33.43	1,913	1,139	-5.8	-2.4
2019	2,835.61	34.19	2,050	1,186	3.9	6.7
2018	2,702.93	33.11	1,974	1,162	6.5	7.6

Source: Macrotrends/ World Bank

Table 2
India and Nepal - Literacy rate (%), Growth rate of Literacy (%) 1991-2018

Year	India		Nepal	
	%	Growth rate (%)	%	Growth rate (%)
2018	74.37	5.07	67.91	8.28
2011	69.30	6.55	59.63	11.02
2001	61.01	12.79	48.61	15.63
1991	48.22	7.46	32.98	12.40

Source: Macrotrends/ World Bank

Table 3
Life expectancy and its growth rate, India and Nepal, 2012-2022

Year	India		Nepal	
	Life Expectancy (Years)	Growth Rate (%)	Life Expectancy (Years)	Growth Rate (%)
2023	70.42	0.330	71.74	0.400
2022	70.19	0.330	71.45	0.400
2021	69.96	0.330	71.17	0.400
2020	69.73	0.330	70.88	0.410
2019	69.50	0.330	70.60	0.410
2018	69.27	0.430	70.31	0.490

Source: Macrotrends/ World Bank

Table 4
Exports, Imports, Trade balance and GDP Growth rate (%), India and Nepal, 2018-2022

Year	Exports (Billions of US\$)		Imports (Billions of US\$)		Trade balance (Billions of US\$)			
	India	Nepal	India	Nepal	India	% of GDP	Nepal	% of GDP
2022	\$759.93B	\$2.76B	\$911.39B	\$17.41B	\$-151.46B	-4.47%	\$-14.65B	-35.88%
2021	\$677.77B	\$1.89B	\$760.90B	\$14.01B	\$-83.13B	-2.64%	\$-12.12B	-32.82%
2020	\$499.73B	\$2.28B	\$510.24B	\$11.41B	\$-10.52B	-0.39%	\$-9.13B	-27.31%
2019	\$529.25B	\$2.66B	\$602.32B	\$14.18B	\$-73.07B	-2.58%	\$-11.52B	-33.69%
2018	\$538.64B	\$2.59B	\$640.30B	\$13.45B	\$-101.67B	-3.76%	\$-10.87B	-32.82%

Table 5
Trade summary, India and Nepal, 2020

Year	India		Nepal	
	Exports	Imports	Exports	Imports
Exports in US\$ (Mil)	275,489	367980	855	9745
Number of products	4417	4332	670	4072
Number of partners	224	211	122	178

Source: World Integrated Trade Solutions/ World Bank

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Insecurity as Threat to Nigeria's Political and Socio-economic Development: Need for Synergy

Emmanuel Imuetinyan Obarisiagbon Osasere Greg Igbinomwanhia

Introduction

Nigeria lately has been enmeshed in a firebox of insecurity leading to scores of deaths of innocent civilians, foreigners, law enforcement agents, to mention but a few. The spate of violent crimes such as kidnapping, ritual killings, suicide bombings, armed banditry and others has increasingly become the regular signature that characterizes life in the country since about 2009 till date (Imhonopi & Urim, 2012).

Successive administrations have tried everything from “force for force” as in the massacre of Odi people on 20th November, 1999 on the order of former President Olusegun Obasanjo to carrot and stick approach to diplomacy as in former Late President Umaru Musa Yar' Adua in 2009 granting of amnesty to the Niger Delta Militants. Have these efforts worked? The answer is no, as the problem seems to rise with greater monstrosity and open defiance

to any known medication it is presently getting.

In addressing the matter pertaining to the survival of Nigeria as a democratic State, it is needful to consider security issues and problems that are capable of affecting the attitude, confidence and cooperation of all groups and segments that make up the Nigerian federation. This paper believes that an exploration of the gaps and gray areas in the Nigeria constitution that are responsible for the various problems and crisis is necessary.

Insecurity in Nigeria has recently assumed an alarming rate affecting every facet of Nigerian life with no end in sight. Although insecurity is not a problem that is unique only to Nigeria because other nations also face the challenge, however, the main point of departure is the way the social menace is managed. Unarguably, insecurity has heightened leading to severe

unimaginable social consequences which has blighted the socio-economic sphere of Nigeria's life. The word 'insecurity', generally refers to the absence of resistance to or protection from harm, peaceful co-existence and development at large. Achumba, et al (2013), simply see insecurity as the opposite of security which tends to affect human life and existence. As a general term, it refers to a state of being subject to fear, threat, danger, molestation, intimidation, harassment and so on, in all aspects. This implies that threat to human life does not only emanate from situation of violent conflicts such as Boko Haram and Fulani herdsmen activities but also from other non-conflict sources. Nigeria appears presently to be battling with security problem and this cuts across its six geographical regions but particularly in the North-East, North Central and South-South. Residents in these regions now sleep with one eye open while government who ordinarily is charged with the protection of lives and property seems lost and incapable of doing this.

In spite of the express provision of Section 14 (2) (1), criminal activities and insecurity such as ritual killings, militancy, Biafra agitation, kidnapping, oil bunkering have remained in news headlines in Nigeria. The wave, dynamics and sophistication of security crisis has led to very serious social

consequences particularly on the economy. Similarly commercial activities have become skeletal and paralyzed in the areas worst hit by insecurity. Consequent upon this, trade and commerce have suffered tremendously, resulting in further pauperization of Nigerians and even government's revenue has dwindled.

Social activities particularly in the crisis prone areas have been locked down due to fear of the unknown; and many of the best brains and manpower have fled for fear of either being kidnapped, killed or maimed. This challenge that Nigeria is faced with appears intractable particularly due to what Adejumo (2011) sees as the nonchalant attitude of the Nigerian government which is supposed to uphold Section 12 (2) (b) of the Nigerian Constitution (1999). For Bankong-Obi (2011), the situation will remain if not worsen because the law enforcement agencies appear unprepared for the present challenges. Adegbami (2013) argues that, generally, the Nigeria populace has lost confidence in the ability of the law enforcement agents to secure their lives and property especially against their inefficiency due to lack of sophisticated weapons and lack of modern day communication gadgets.

The causes of security challenges in Nigeria appear varied and include

economic- unemployment, poverty, rise of ethnic and militia groups, weak leadership, weak judiciary and ineffective security agencies (Ali, 2013; Ezeoba, 2011; Jega, 2002; Okorie, 2011; and Saluwu, 2010). The government safeguards the lives and property of its citizens using the security agencies which are constitutionally charged with maintaining law and order. The rising wave of insecurity in Nigeria has drawn attention to the work and modus operandi of the various state security agencies. The question is, how effective are they in the light of the glaring security crisis besieging Nigeria? Is it time for Nigerians to start asking if the present security agencies can be relied on? This therefore formed the basis upon which the study was embarked upon.

Origin and incidence of insecurity crisis in Nigeria

Without doubt, Nigeria has much potential for greatness, especially with its large population made up of a dynamic work force, a growing economy, abundant natural resources, diverse raw materials, huge oil deposits and a reservoir of intellectuals. In spite of these indices for greatness, Nigeria still remains a developing country struggling most frantically to find her feet among the comity of nations due to the prevailing insurgence and insecurity among other

factors that have continued to pose a challenge to its development and growth. The truth be told, Nigeria is passing through turbulent and trying times as echoes of not just insurgency but criminality have marred its nascent democracy. Crimes such as militancy, kidnapping, ritual killing, armed robbery, assassinations, destruction of public and private property and lack of relative peace appear to be on the increase in Nigeria.

The security crisis that has presently engulfed the country is traceable to the aftermath of the Nigeria civil war and the adventure of the military into governance which necessitated the importation and use of arms and ammunitions (Ewetan and Urhie, 2014). The authors' argument indicates that not long after the civil war, these arms that found their way into the hands of civilians and ex-military men were now used to carry out criminal activities (ibid). Besides the proliferation and free flow of arms, many people lost their jobs as a result of the war and needed to survive; to survive, they resorted to criminal activities. Crimes like kidnapping became prominent in the 1990s and were used by the Niger Delta militants as a means to protest the exploitation and environmental degradation of their community. The Niger Delta region which is the source of Nigeria's wealth, regrettably suffers from a paradox of poverty in the midst of plenty. The

agitation and disenchantment of the marginalized youths led to the emergence of various militant groups that were involved in not just kidnapping but bombing of oil installations. These resulted in security crisis which the Federal government battled to bring under control.

In the South-East, the agitation for a Biafra State which was first muted and championed by the late Col. Emeka Odumegwu Ojukwu, later gained currency in the activities MASSOB and IPOB led by Nnamdi Kanu whose whereabouts till date is unknown. These agitations have led to security crises in the south-east and its resurgence is attributable to the perceived marginalization and lopsided development embarked upon by the administration. In the Middle-belt of North Central Zone, insecurity is also rife (ref). In Plateau State particularly, conflict between the Hausa-Fulani and the Birom people has left hundreds of people dead while in Benue State, Governor Samuel Ortom has had a hectic time with the conflict between the Fulani herdsmen and the local people, thereby leading to many deaths.

The North-East Zone of Nigeria has also had its fair share of security challenges, particularly as it has housed the dreaded Boko Haram (ref). In spite of claims by the Federal

government of Nigeria that it has subdued and brought Boko Haram to its knees, evidence abounds to show that the contrary is the case. Edo State has also been in the limelight in terms of security issues. Apart from being one of the hotbeds of kidnapping, some of its communities have been invaded by the Fulani herdsmen who have continued to rape women and girls, kill both old and young persons as well as destroy farm products.

It would appear dimensionally, that the pattern of insecurity in Nigeria has been regionalized - militia group's insurgency in the North, kidnappers in the Eastern and Southern part of the country, ritual killings in the West, and political and non-political assassinations across the nation. As a result of the increasing incidence and prevalence of insecurity and in order to ameliorate it, the Federal government has embarked on the criminalization of terrorism by passing the Anti-terrorism Act (2011), the proscription of the Indigenous People of Biafra (IPOB), installation of computer-based Close Circuit TV camera (CCTV) in some parts of the country, and broadcast of security tips in mass media (Azazi, 2011). Commendable as these efforts are, the level of insecurity in the country still remains high. The question is what are the factors responsible for the continuing insecurity situation in Nigeria?

Predisposing Factors in Security Crisis

Weak security and judiciary system

The statutory role of maintaining law and order in any given society rests squarely on law enforcement agents. Unfortunately, it would appear as Iygeal (2012) has pointed out that the law enforcement agents appears unaware of security challenges and more often than not, act after the occurrence of security breaches. He further noted that at other times, even when they hear of violence, criminal activities or likely breach of security, they ignore or are slow to act for the fear of death or harm befalling them. On his part, Temple (2013) contended that the law enforcement agents are not well provided for, in terms of life insurance, accommodation, adding that their monthly salary is poor with no welfare packages. He advised the government to stop putting the lives of security personnel in danger by sending them to quell insurgency without the required equipment. Another argument is that even when security personnel have the basic training and equipment, some of them get influenced by ethnic or religious sentiments and are thus easily overwhelmed by their personal interest to serve their people instead of the nation (see, Achumba, et al 2013). Also, Olorisakin (2008) asserts that the police population ratio in Nigeria is

1:450 which falls below the United Nations' standard. This implies that as a country, Nigeria is grossly under-policed and this perhaps explains the police's inability to effectively tackle crimes and security challenges. Consequently, rather than be national peace keepers with the responsibility of protecting Nigerian citizens, they take sides and fuel insecurity through either leaking vital security information or aiding and abetting criminals to acquire weapons or to escape the long arm of the law. This perhaps explains why some individuals have called for the posting of security personnel to their state of origin.

The Nigerian Police is often argued to suffer from a very serious image problem in the eyes of the public it is established to serve (Oputa; 1991; and Alemika and Chukwuma 2000). The country's Police is often viewed with suspicion, a pariah of some sort, perceived to be "unfriendly", among others. The rising crime rate, especially violent crimes involving kidnapping, armed robbery, ritual murders, political assassinations, ethnic and religious violence, and election violence, has dampened the hope of the public on the capacity of the police to ensure the safety of people's lives and property. The general feeling is that the police can neither solve the crimes already committed, through arrests and successful prosecutions, nor prevent

or, at least, reduce the incidence of crimes.

Closely associated with the above is the weak judicial system in Nigeria. By the Nigerian Constitution (1999), the judiciary is charged with the interpretation of the law and adjudication in civil and criminal cases. In doing this, it ensures that rules are not broken and social order is maintained. Fukuyama (2004) argued that the increasing impunity and daredevilry of sundry looting and embezzlement especially of public funds are enhanced by the weakness of the Nigeria legal system. Justice and the rule of law do not just depend on the law but on the impartiality, astuteness and nobility of the judicial officers. Unfortunately, as posited by Tella (2015) and Obarisiagbon (2017), the Nigerian judicial system is weak and does not discourage criminality as many of the offenders easily find their way home even after being arrested and prosecuted. Nigeria is thus in trouble if the security personnel cannot prevent and detect crimes due to lack of basic equipment and training and the judiciary too, due to the flaws inherent in its system that hinders the dispense of justice.

Economy- poverty and unemployment

A poor economy with high poverty and unemployment rate appears to have been the bane of the Nigerian

society (The Nigerian Bureau of Statistics cited in Ogah, Fanimo, Ebosele and Adepetun (2011). Every year institutions of higher learning produce many graduates who regrettably, are thrown into the labour market with no hope in sight for jobs. In an effort to keep body and soul together, some become frustrated and go into violent and criminal acts such as the “lucrative” kidnapping, militancy and armed robbery. Others have become prey to terrorists and are easily radicalized. The case of Boko Haram, IPOB and Niger Delta militancy easily come to mind. Nwagbosa (2012) stressed that past governments have failed to put in place measures that will reduce unemployment and poverty, which have been the major causes of insecurity in Nigeria. To a large extent, the Niger Delta region of Nigeria under the late President Umaru Yar'Adua and former President Goodluck Jonathan's introduction of amnesty in which unemployed and poverty-stricken youths who laid down their arms were sent to training centres for vocational and educational purpose brought amazing peace and tranquility in that area.

Ethno-religious conflicts

Suspicion and mutual distrust among the various ethnic groups as well as the major religions in Nigeria have tended to be a source of security

challenges (Adebooye, 2019). Two dominant religions exist in Nigeria- Islam and Christianity, and there exists frequent and persistent religious clashes between these dominant religions and the end seems not to be in sight. In all parts of the country, ethno-religious conflicts have assumed alarming rates.

Porous borders

It has been observed that the porous borders in Nigeria which facilitates unrestricted and untracked movements of people have greatly contributed to insecurity in Nigeria. Apart from unrestricted movement of individuals into Nigeria, arms and ammunitions whether they be light, small or heavy have found their way into Nigeria most times undetected and have been used by religious fanatics, insurgents and militia to wreak havoc on Nigeria's social order with little or no response from law enforcement agents. Edeko (2011) reports that Nigeria hosts over 70% of about 8 million illegal weapons in Africa which have been used to create security crises. Adeola and Olayemi (2012) posit that the porosity of the country's border has led to uncontrollable influx of migrants, mainly youths from neighbouring countries particularly Niger, Chad and Republic of Benin who have been majorly responsible for some of the criminal acts in Nigeria.

Lopsided development, marginalization and inequalities in the country

The present government of Nigeria has severally been accused of ethnic bias and the marginalization of some sections of the country in the distribution of basic infrastructure and these have greatly compounded the security situation of Nigeria (Nwadiakor, 2011). Key political appointments presently have been given to people of Northern extraction while the South-East has been left in the cold. This perhaps explains the agitation for the Republic of Biafra and several security breaches that have accompanied the agitation. Besides, it is quite glaring that there is great disparity in life chances in Nigeria. A vast majority of the public has a feeling of inequality, unfairness, marginalization and this has led to frustration and loss of hope, especially amongst the youths. These youths now express their disillusion about the state of affairs by any means possible, legal or illegal. The result is growing insecurity (Onuoha, 2011).

Democracy and National Security: The Synergy

Scholars do not agree with regards to the role of democracy in peace and violent conflict. Democratic theory as enunciated by Russett (2007:2) hinges on the fact that democracy leads to and

engenders peace as peace cannot be achieved in the absence of democracy. Thus, it can be deduced from democratic peace theory that the more democratic countries are, the more peace we have in the world. Scholars' argument is that the probability of two democratised countries engaging in militarised conflict is extremely low (Moaz and Russett 1993; Remmer 1998). Domestic norms and institutions prevalent among democratic polities have been advanced to be responsible for peaceful relationship among democratic countries. There seems to be no such constraints when they engage in dispute with non-democratic countries.

However, democracy has dark sides; or it is claimed that democracy kills (Keane, 2010:2). Violence is inherent in every effort to establish and maintain democracy. The practice of democracy everywhere rests with foundational acts of violence (Keane, 2010). Reynal - Querol (2004) further argued that part-democratic countries are more prone to civil war than full democracies, and full autocracies. Therefore, it appears that violence prevention or reduction does not rest solely on democratic status of a country alone. It has equally been observed that countries may not go into war with other democratic countries; however, they are often embroiled with internal conflict which is often precipitated by electoral contest.

Cervellati and Sunde (2011) contend that democratization process may trigger political violence because the scenario under which democratization takes place especially during democratic transition provides convenient platform for violent conflicts, especially among groups within a polity. Keane (2010) christened this democratization of violence. He added that the idea of democratic countries engaging undemocratic countries in war on some issues like that of America war in Afghanistan and in other countries only to introduce democratic governance after subjugating them is tantamount to democratization of violence.

There is a convergence in views by Hoglund (2006) and Horowitz (1985) that competitive elections result in ethnicization of electorate. Instead of bringing their similar virtue to the table, political parties rather emphasize their differences to win votes (Weinberg 2001 cited in Hoglund, 2006). Thus, in plural societies, voters tend to vote according to their ethnic identity and thus the election results become almost identical to that of the ethnic census. This could cause trouble for post electoral politics in such a country and thus become a cause of ethnic conflict (Taleski, 2011).

Rapoport and Weinberg (2001) stated that situation immediately after

elections is often very sensitive as the acceptance or otherwise of the outcome of elections by contenders can produce outbreaks of violence as it was the case in East Timor after the 1999 referendum of Independence. From the above, it can be inferred that although the universal position is that democracy midwives peace, democracy alone cannot bring about peace as evidenced in some countries undergoing democratization such as Cote d'Ivoire, Democratic Republic of Congo, and old Sudan among others. This is because elections which are cardinal features of democratization often generate conflicts in partially democratic countries.

Democracy is not only a people-centred process but one that brings phases of fulfillment to a nation as it progresses. To Raymond Grams Swing (1887-1968), as cited in Standard Encyclopedic dictionary (1971) - democracy is unfinished business, not fulfillment; it is a process of always advancing towards fulfillment. This statement implies that democracy is an on-going process, project and/or venture that aims at attaining fulfillment in future. So it requires time to grow, nurture and develop in any country that embraces it.

This paper, earlier on, states that Abraham Lincoln's concise definition of democracy remains classic. Democracy is the government of the

people, by the same people, and meant for the same people. Democracy is a system of government in which the people exercise the governing power either directly or through selected representatives. It is a government established by the majority that protects the interest of the minority.

Whether democracy is being practiced on a participatory or representative basis, it requires a stable, conducive and peaceful political space to thrive. It demands relatively calm and chaos-free society to be able to develop on a firm foundation. For the elements of democracy such as freedom, participation, equality, fairness, justice, free and fair elections, existence of opposition, rule of law, respect for fundamental human right etc., to thrive in any polity or nation, it requires that the polity or nation maintains some appreciable degree of socio-cultural, political and economic stability and this falls within the domain of national security. The national security of any nation covers its total posture and condition in terms of state of wellbeing of the people, their assets, national interests and existence as a sovereign entity. National security may not thrive in an undemocratic system of government because the people will lack freedom, respect for human rights, rule of law, participation in governance, justice and equity etc and will in reaction to

the situation, likely become unhappy, restive and even riotous. This could degenerate into lawlessness, chaos, uproar, conflicts, social disorder. They are two concepts that connect because they need each other to thrive and when experienced together in a nation, that nation enjoys social and political stability which are necessary for development to occur. While democracy spells out the way a government should conduct itself, carry out its programmes and plans, manage the resources available within a nation and ensure the manifestation of the elements of democracy, national security, on its own, is to provide the peace, security, harmony and intelligence needed to have a calm and free environment for true democracy to blossom. As the democratic system in a nation survives, grows and strengthens; citizens, institutions and the nation itself enjoy good socio-political, cultural and economic conditions that helps enhance their overall stability, harmony, peace and tranquility. This is basically what national security brings to the table.

The two concepts of democracy and national security have the potential to help one another to thrive in any society. It is imperative that synergy between democracy and national security is ensured to create the right atmosphere for the development of Nigeria. With the present happenings, events, circumstances, and feelings of

Nigerians about Nigeria, one may say that the country remains together, is an act of God. With terrorism, kidnapping, poverty and hunger, ethno-religious conflicts, crimes, corruption and other social vices, Nigeria's fragile democracy is under serious threat. The situation and general condition of things in the country today is disturbing. The synergy between democracy and national security must be enhanced if Nigeria is to enjoy good governance, long term development, national integration, peace and progress.

Conclusion

The insecurity problem in Nigeria has become a formidable challenge for the government and people. The governance challenge facing the polity has trickled into the society, resulting in moral decadence. The growing dissatisfaction, discomfort and distress within the larger society coupled with the deepening official corruption, high unemployment rate, economic crisis, pauperization of the masses, decaying infrastructure and a futile national integration project have heated up the socio-political environment. Consequently, armed conflicts, terrorism, ethno-religious mass killings, kidnapping, political assassination and other violent crimes have become the leitmotif of Nigerian social relations. The government has made efforts to contain the insecurity

inferno raging in many spots in the country but until the moral foundation on which the Nigeria state is fulcrum is regenerated, the country may be walking the precipice.

Confronting the Insecurity

Confronting the mammoth insecurity in Nigeria indeed requires the closing of ranks by civil society organisations. Essentially, the thriving of exclusive democracy requires the collaboration of the political and business elites (who are outside the categorization of civil society). The third force that could confront a societal challenge emanating from this elite amalgam (the political and business elite fusion) is the civil society. Faith-based groups must thus speak out in condemnation of the tendencies that tolerate cabalism of Nigerian affairs. University-based unions are also expected to become more active in incorporating the course of the disadvantaged members of the society into their own activisms.

Women organisations in the country indeed appear to have gone to sleep over the matter of impactful democracy in Nigeria. They even seem to have become lethargic over the issue of questioning why the poverty-ridden conditions in the country have refused to recede. And until these women groups rise in unison to interrogate these issues, the incidences of

exclusive democracy and national insecurity would continue. The Nigerian civil society for instance is expected in this study to participate in the exposition of the humongous double-dealing called Nigeria Governors' Forum (NGF). This paper further makes the following recommendations in order to facilitate national security and ensure a sustainable democracy in Nigeria:

1. There is the urgent need to fully equip the security agencies in the country with modern communication gadgets and sophisticated weapons. Besides, the security agencies must not only coexist but also be on the same page with regards to security matters.
2. Nigeria borders should be made more tight to be able to screen the influx of people that come into the country and what he/she is in Nigeria to do, because, the present state of the border has exposed her to infiltration of all kinds of elements that never meant well for Nigeria and the citizens alike.
3. The Nigerian government should endeavor to provide jobs or create an enabling atmosphere for the army of youth such that they could be gainfully employed to do something productive with their lives. And there is need for the provision of infrastructural

facilities for the entire populace as this is the only way the citizens feel they belong and see the essence of having good government in place.

4. Government should be more involved in mediating in the political crisis and civil unrest in some neighbouring African countries. If not, most of their citizens will come seek refuge in Nigeria and in the course of their interaction and mingling with Nigerians, they will be polluted. Moreover, the weapons used in their crisis may be gotten cheaply by Nigerians thereby, infiltrate the country and those weapons get to the hands of criminal elements.
5. Government should endeavor to put in place a comprehensive biometric data of Nigerians, provide better welfare, instill positive and proper political culture in the minds of the citizenry from infant to the adults and also put in place, measures that promote sincerity, probity, sense of honesty and responsibility on the part of leadership and followership at all levels.
6. Mechanism should be put in place by the appropriate authorities to ensure that intelligence gathering is given due attention to be able to nip crime that may degenerate into large scale violence in the bud. As a

result, sharing information and synergy among the security agents should be encouraged in Nigeria.

7. Credible people should be made to manage elections so as to ensure widely acceptable results that are not contestable and which will in turn help prevent the perennial violence that may erupt from feelings of being cheated by the opposition parties and by implication, the escalation of violence will be curtailed and in turn bring about peaceful transition process.
8. There is the need to revive and reinforce moral values and virtues, ethics in the country. Government and relevant institutions should go a step further by codifying these values/principles so that Nigerians, small and old can begin to imbibe these virtues to guide their conduct, behaviour and social relations with others. First of all, government carries a moral burden to lead by example. Providing moral leadership that eschews evil, corruption, vices, inequality, injustice and wickedness will compel the people to model the character of their leaders and vice versa. In addition, the democratic system in place must begin to deliver the needed social goods so as to improve the standard of living of Nigerians and deliver many

citizens from the state of absolute poverty to which they have been subjected for a long while.

9. Government should plug in all the holes through which scarce resources are being siphoned so as to free resources for national development and equipping of the ministries to fulfill their functions.
10. There is the need for a national conversation or dialogue where the people can release their pent-up anger and frustration against the State and fashion out the blueprint for the engagement of all the component units that make up Nigeria.
11. Paying lip-service to the matters of insecurity in Nigeria by government and its representatives is sitting on a time bomb that may soon explode. Sustaining personal or regime security will not secure government or its representatives if this challenge is not nipped in the bud. The governance process must be erected on the pillars of moral values and virtues and the people must be led by a moral leadership that will strive to secure the commitment and support of all citizens to make the Nigerian project a true success.

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Challenges in Water Conservation in Rural Community

Jidnyasa Kurlapkar

Growing demand across competitive sectors, increasing droughts, declining water quality, particularly of groundwater, and unabated flooding, inter-state river disputes, growing financial crunch, inadequate institutional reforms and enforcement are some of the crucial problems faced by the country's water sector. Availability of safe drinking water is inadequate. Severe water shortages have already led to a growing number of conflicts between users (agriculture, industry, domestic), intra-state and inter-state. Emerging challenges include management of existing infrastructure and of the water resource itself. Water reform in India mostly focuses on organizational issues rather than the instruments that govern the relationship between the regulator and the user.

India continues to struggle with growing financial crunch to complete its water sector infrastructure and its operation and maintenance cost. On the other hand, inadequate institutional

reforms and effective implementation has affected its performance level. In recent years, the Government of India has initiated several steps to improve investment and management of water management sector, which includes: Accelerated Irrigation Benefits Programme, Hydrology Project, setting up of Water Quality Assessment Authority, Command Area Development and water management programme, National Project for Repair, Renovation and Restoration of Water Bodies directly linked to Agriculture, Flood Management, and River Basin Organizations.

In this background a significant majority - three out of every four of the globe's most impoverished individuals - reside in rural settings, relying primarily on agriculture for their survival. Beyond farming, their fundamental needs encompass access to clean drinking water, sanitation facilities, and hygienic conditions critical for maintaining their health. In rural and tribal areas, an astonishing

90% of those experiencing extreme poverty. The inadequacies in rural development are multifaceted and measurable across various dimensions. These include prevalent poverty, exacerbated health concerns due to food insecurity, insufficient nutrition, and inadequate sanitation practices. Compounded by low levels of education and training, a substantial number of rural entities - be it households, businesses, farmers, or herders - struggle with significant challenges in securing consistent and reliable access to water, resulting in water insecurity.

This deficient development is further evident in low agricultural productivity and insufficient investments, compounded by restricted access to credit and markets. Moreover, it manifests in the persistent degradation of ecosystems, encompassing the depletion of soil fertility, vegetation, and other natural elements. Simultaneously, the predominant development models favored in more prosperous regions often provoke adverse consequences. These include the loss of agricultural land, uncontrolled urban expansion, heightened pollution, and escalating issues like soil exhaustion and salinization. Additionally, these models contribute to the depletion of biodiversity, the rampant overexploitation of groundwater, and the unjust appropriation of resources at the expense of rural communities.

This approach to development has long term consequences on society that include floods, rapid sediment buildup in dam reservoirs, escalating inequalities, ongoing population growth, rural migration to urban areas leading to the transfer of poverty, exacerbation of risks related to food, water, health, climate, and socio-political stability - particularly noticeable among the rural and tribal communities.

Compounding these challenges is the pressing issue of climate change, which holds significant implications for water resources, land usage, food production, and forests, signifying its paramount importance. Recent reports from the Intergovernmental Panel on Climate Change (IPCC) underscore the heightened risk of "loss of livelihoods and income in rural regions due to inadequate access to clean water and irrigation," along with the potential for "breakdowns in food systems." The escalating occurrences of soil aridity, droughts, and flooding warrant substantial concern. In this situation water conservation in rural communities is a critical issue that intersects with various social, economic, and environmental challenges. In many rural areas worldwide, access to clean and sustainable water sources remains a persistent problem, impacting the well-being and livelihoods of millions of people. While water is essential for agricultural, domestic, and industrial

purposes, rural communities face several unique challenges in conserving and managing this precious resource.

Water conservation in rural communities presents a multitude of challenges that are unique to their geographical, socio-economic, and infrastructural conditions. These challenges arise due to factors such as limited access to technology, lack of awareness, inadequate infrastructure, changing climate patterns, and socio-economic disparities. This paper explores the complexities and multifaceted challenges associated with water conservation in rural communities, providing insights into the difficulties faced and potential solutions.

Water Resources: An Overview

In India, the total utilizable water resource is assessed as 1123 BCM. Keeping a provision of about 71 BCM/yr out of 433 BCM of groundwater, 362 BCM/yr of the resource is estimated to be available for irrigation. The net draft of groundwater for irrigation is around 150 BCM/yr. The per capita availability of water at national level has been reduced from about 5,177 cubic meters in 1951 to the estimated level of 1,820 cubic meters in 2001 with variation in water availability in different river basins. Given the projected increase in population by the year 2025, the per

capita availability is likely to drop to below 1,000 cubic metres, which could be labeled as a situation of water scarcity (GOI, 2006). India has a highly seasonal pattern of rainfall, with 50% of precipitation falling in just 15 days and over 90% of river flows occurring in just four months. A total storage capacity of 212.78 Billion Cum (BCM) has been created in the country through major and medium projects. The projects under construction will contribute to an additional 76.26 BCM, while the contribution expected from projects under consideration is 107.54 BCM. The total availability of water in the 76 major reservoirs was 109.77 BCM at the end of the monsoon of 2005 (GOI, 2006). The irrigation potential of the country has been estimated at around 139.9 mha without inter-basin sharing of water and 175 mha with inter-basin sharing. The Central Ground Water Board (CGWB) has estimated that it is possible to increase the groundwater availability by about 36 BCM, by taking up rainwater harvesting and artificial recharge over an area of 45 mha through surplus monsoon runoff. Thus, the groundwater availability may correspondingly increase. The recent estimates (GOI, 2006) on water demand are made by a) Standing Sub-Committee of the Ministry of Water Resources (MoWR) and b) the National Commission for Integrated Water Resources Development (NCIWRD); their estimates are made till the year 2050. Both of them have

triggered warning bells on the intensity of the problem. The estimates by MoWR indicates that, by year 2050, India needs to increase by 5 times more water supplies to industries, and 16 times more for energy production, while its drinking water demand will double, and irrigation demand will raise by 50 percent. To address the water-related issues and thereby launch a massive awareness programme all over the country, the Government of India declared year 2007 as “Water Year”.

Despite its escalating severity, the global water crisis remains alarmingly overlooked. The depletion of water resources pushes millions into distress. The United Nations Water Development Report of 2018 highlights a staggering reality: nearly 3.6 billion individuals, almost half the global population, reside in regions with rapidly declining water levels. The urgency to save and utilize water efficiently is unparalleled as reports of droughts and water deficits continue to surge. In India, the predicament is especially dire. The escalating population exacerbates the challenge of providing clean drinking water, projecting a harrowing future. By 2030, the demand-supply gap for water will surge from 50% to a staggering 75%. An unsettling 2019 NITI Aayog report reveals that over 600 million people, nearly half the population, grapple with acute water stress. This difficulty is acutely present in rural

areas, where three-quarters of households lack access to clean, piped water, exposing them to grave health risks. The World Bank statistics highlights on the challenging situation within the country.

- a. **Lack of Safe Drinking Water** - Around 163 million individuals in India are still deprived of access to safe and potable drinking water.
- b. **Sanitation Disparities** - A distressing 210 million people across India lack access to improved sanitation facilities.
- c. **Challenges in Water Conservation in Rural Community** - Approximately 21% of communicable diseases prevalent in India can be attributed to consuming contaminated and unsafe water.

As per the World Bank, estimates show that at the current rate of population growth combined with existing water usage patterns and practices, we are likely to experience close to a forty percent (40%) deficit between projected demand and availability of usable water, as early as by 2030. By 2050, feeding nine billion mouths is likely to result in a 60% increase in agricultural production, which might consume 70% of the available water resources, consequently resulting in up to a 15% increase in water withdrawals.

The World Bank also states that, “Estimates indicate that 40% of the world population lives in water-scarce areas, and approximately ¼ of world's GDP is exposed to this challenge. By 2025, about 1.8 billion people will be living in regions or countries with absolute water scarcity.” India is no exception to water scarcity. The growing uncertainties of climate change have in fact made a bad situation worse, we might encounter unprecedented levels of water scarcity across the country sooner.

The Concept of Water Management

- World Bank defines water resource management or water management as the “process of planning, developing, and managing water resources, in terms of both water quantity and quality, across all water uses. It includes the institutions, infrastructure, incentives and information systems that support and guide water management.”
- Water management, therefore, is a facet of water cycle management that considers all existing and projected demands for water, then allocates available water resources as fairly as possible to satisfy all, or as many, such demands, as possible.
- The objective of a successful water management strategy is to ensure

the availability of sufficient water of adequate quality to cover all water needs, including drinking, sanitation, agriculture, and ancillary food production, energy generation, inland water transport, etc. while simultaneously sustaining and protecting healthy water ecosystems and preventing devaluation of the aesthetic and spiritual values of natural water bodies.

- Water management strategies also consider water-related risks, whether natural calamities like floods or drought, or contamination of the natural resource. Also, the complexities involving the available water resources and their usage across households, economies, and ecosystems form the basis of water management. Unfortunately, like most other resource management planning, the ideal distribution of water resources seems to be a distant dream.

Significance of Saving Water, Especially in Rural India

Saving water holds immense significance, particularly in rural India, due to its multifaceted impact on various aspects of life, economy, and the environment. In rural areas of India, where agriculture forms the backbone of the economy and where

access to clean water is often a challenge, the significance of conserving water becomes even more critical.

sustainable supply of clean water for drinking and sanitation purposes, thereby improving public health outcomes.

- 1) **Agricultural Sustainability:** Agriculture is the primary occupation in rural India, employing a significant portion of the population. Conserving water is crucial for sustaining agriculture, ensuring food security, and preventing crop failure during droughts or erratic weather conditions. Efficient water management practices, such as drip irrigation and rainwater harvesting, can help farmers optimize water usage and improve crop yields.
- 2) **Livelihoods and Rural Economy:** Water scarcity directly affects rural livelihoods, especially in regions heavily dependent on agriculture. Insufficient water availability leads to reduced agricultural productivity, impacting farmers' incomes and causing economic hardships. By conserving water, rural communities can safeguard their livelihoods and contribute to a more resilient rural economy.
- 3) **Health and Sanitation:** Access to clean water is fundamental for maintaining good health and preventing waterborne diseases. In rural India, where access to safe drinking water is often limited, conservation efforts can ensure a
- 4) **Ecosystem Preservation:** Water conservation plays a pivotal role in preserving ecosystems and biodiversity. In rural areas, where natural resources are intertwined with livelihoods, protecting water sources such as rivers, lakes, and groundwater aquifers is crucial for maintaining ecological balance, sustaining flora and fauna, and ensuring long-term environmental health.
- 5) **Mitigating Climate Change Impact:** Climate change has led to unpredictable weather patterns, including prolonged droughts and extreme rainfall events. Conserving water helps communities adapt to these changes by ensuring water availability during periods of scarcity and reducing vulnerability to climate-related risks.
- 6) **Sustainable Development:** Water conservation aligns with the goals of sustainable development by promoting responsible resource management. By using water efficiently, rural communities can ensure the availability of this precious resource for future generations, fostering sustainable development and resilience against environmental challenges.

7) **Community Empowerment and Resilience:**

Encouraging water conservation initiatives empowers rural communities by involving them in decision-making processes and implementing sustainable practices. Educating and mobilizing communities to conserve water not only builds resilience against water scarcity but also promotes a sense of ownership and responsibility for natural resources.

By managing and using water resources sustainably, rural communities can prevent disputes and promote equitable distribution of this essential resource.

Overall, the significance of saving water in rural India cannot be overstated. It directly impacts agriculture, livelihoods, health, the environment, and overall socio-economic development. Emphasizing water conservation practices tailored to local contexts can lead to positive outcomes, ensuring a sustainable and secure water future for rural communities in India. The key issues are summarized in following Table No 1

8) **Reducing Conflicts over Water Resources:**

In regions where water resources are limited, conservation efforts can help reduce conflicts and tensions over access to water.

Table No 1 Water sector issues and key features	
Issues	Key features
1. Institutional challenges	a) Crumbling water infrastructure and its poor maintenance b) Imbalance of management power between State and users (farmers, citizens, industries) c) Water reforms focusing mostly on organizational issues rather than instruments that govern the relationship between regulator and user d) Public private partnership (private sector participation) required in water resources development
2. Water stress and pollution problems (environmental concerns)	a) Decline in per capita water availability b) Inadequate water availability to meet basic human needs including agriculture c) Unavailability of safe drinking water d) Deteriorating water quality and pollution problems e) Seasonal water shortages f) Increasing droughts and flooding g) Wasteful water use in agriculture and urban areas

3. Lack of competition in service provision	a) Public monopoly in provision of formal irrigation and water supply services b) Poor quality service provision c) Inefficient and inequitable provision of services
4. Service shortcomings and water use inefficiency	a) Unclear water entitlements b) Water rights linked to land rights c) Inadequate human resource development
5. Groundwater overexploitation and pollution problems	a) Declining water tables b) Sea water intrusion in coastal areas c) Deterioration of groundwater quality (arsenic and iron concentration) d) Undefined property rights e) Power subsidy triggering extraction of the resource and the related equity issues
6. Growing financial crunch	a) Waived or reduced water charges enlarging the gap between prices and costs b) Liability from deferred maintenance c) Resistance against increasing charges for poor quality service provision d) 'Sunk costs' incurred by households to cope with poor public services
7. Growing water conflicts	a) Inter-state disputes on sharing of river water b) Conflicts between different users (domestic, agriculture, industrial) c) Conflicts between different areas (rural, urban, peri-urban)
8. Lack of openness in water management programs and absence of beneficiaries participation	a) Inadequate public accessibility to relevant information on water management b) Lack of accountability, participation and transparency in rule c) Insufficient involvement of beneficiaries in water resources management authority

Challenges in water conservation in rural communities

Water is a finite and essential crucial resource for sustaining life, agriculture, and economic activities. Rural communities often encounter severe challenges in managing and

conserving water due to various reasons. The primary challenges in water conservation in rural communities can be categorized as follows:

1) **Limited Infrastructure and Access to Safe Water** - One of the

most fundamental challenges in rural water conservation is the absence of adequate infrastructure for water supply and treatment. Many rural areas lack access to centralized water supply systems, forcing communities to rely on natural water sources such as rivers, ponds, and wells. These sources are often susceptible to contamination, leading to health risks for the population. The lack of access to safe drinking water jeopardizes the well-being of these communities and hampers their ability to conserve water effectively.

2) **Climate Change and Unpredictable Weather Patterns -**

Climate change exacerbates water scarcity in rural areas, causing erratic rainfall patterns, prolonged droughts, and increased temperatures. These climate-related challenges disrupt agricultural activities, affect crop yields, and intensify the pressure on water resources. Rural communities face difficulties in adapting to these changing weather conditions and must implement sustainable water conservation strategies to mitigate their impact.

3) **Agricultural Water Use and Irrigation Practices -** Agriculture is the primary consumer of water in rural areas, accounting for a

significant portion of water usage. Inefficient irrigation methods, such as flood irrigation, prevalent in many rural farming practices, lead to substantial water wastage. Educating farmers about modern irrigation techniques and promoting water-efficient farming methods is essential for conserving water while ensuring agricultural productivity.

4) **Socio-economic Factors and Behavioral Patterns -**

Socio-economic factors significantly influence water conservation efforts in rural communities. Poverty, lack of education, and traditional beliefs often contribute to water misuse and inefficient practices. Behavioral changes and community engagement initiatives are crucial in fostering a culture of water conservation. Empowering communities through education and awareness campaigns can drive sustainable water management practices.

5) **Inadequate Waste Water Treatment and Sanitation -**

Proper wastewater treatment and sanitation facilities are often lacking in rural areas. Inadequate sanitation infrastructure leads to contamination of water sources, posing health risks and further stressing the available water resources. Implementing decentralized wastewater treatment

systems and promoting sanitation and hygiene practices are essential for conserving water quality in rural communities.

6) **Governance and Policy Challenges**

- Effective water conservation requires robust governance structures and supportive policies. However, rural areas often face challenges in governance, including inadequate funding, weak institutional capacity, and limited enforcement of regulations. Policy frameworks tailored to rural needs, combined with community participation, are crucial for successful water conservation efforts.

7) **Limited Infrastructure and Accessibility:**

In rural areas, inadequate infrastructure often leads to limited access to clean water. Remote locations might lack proper water distribution systems, forcing communities to rely on distant or contaminated water sources. The absence of pipelines, treatment plants, and storage facilities makes it difficult to provide consistent access to clean water, exacerbating the conservation challenge.

8) **Climate Change and Erratic Weather Patterns:**

Climate change has disrupted traditional weather patterns, leading to erratic rainfall

and prolonged droughts in many rural regions. These changes affect water availability for agriculture and everyday use. Reduced precipitation and increased evaporation rates threaten surface water sources like rivers, lakes, and ponds, intensifying the struggle for water conservation.

9) **Agricultural Demands and Water Intensive Practices:**

Agriculture accounts for a significant portion of water usage in rural areas. Outdated farming practices and lack of efficient irrigation methods contribute to excessive water consumption. Smallholder farmers often face challenges in adopting modern, water-efficient technologies due to limited resources and knowledge, further straining water resources.

10) **Contamination and Pollution:**

Rural communities frequently encounter water pollution issues due to inadequate waste disposal systems, agricultural runoff, and industrial activities. Pollution from pesticides, fertilizers, and untreated wastewater contaminates water sources, endangering public health and diminishing the availability of potable water.

11) **Population Growth and Increased Demand:**

Rural areas experience population growth,

putting additional pressure on limited water resources. As the population expands, so does the demand for water, leading to overexploitation of available sources and potential conflicts over water access.

12) Lack of Education and Awareness:

Limited education and awareness about water conservation practices hinder efforts to promote sustainable water use in rural communities. Knowledge gaps regarding efficient water management techniques, sanitation, and the importance of preserving water sources contribute to wasteful practices.

13) Economic Constraints: Economic challenges, including poverty and inadequate funding, restrict the implementation of water conservation initiatives in rural areas. The high cost of installing and maintaining water infrastructure, coupled with limited financial resources, impedes progress in addressing water scarcity issues.

14) Institutional and Governance Issues: Weak governance structures and inadequate institutional support often hamper effective water management strategies. In rural settings, unclear policies, insufficient regulatory frameworks, and a lack of

coordination among stakeholders hinder the sustainable conservation of water resources.

Strategies suggested for water conservation in rural communities

Addressing these challenges requires a multifaceted approach that integrates various strategies:

1. Infrastructure Development:

Investing in infrastructure such as water storage facilities, pipelines, and treatment plants is crucial to improving access to clean water in rural areas. Implementing efficient water supply systems can enhance water availability and reduce wastage.

2. Climate-Resilient Solutions:

Promoting climate-resilient practices like rainwater harvesting, drought-resistant crops, and efficient irrigation methods can help communities adapt to changing weather patterns and mitigate the impact of droughts on water resources.

3. Community Engagement and Education:

Empowering rural communities through education programs on water conservation, sanitation, and sustainable practices fosters a culture of responsible water usage. Awareness campaigns can

encourage behavioral changes that promote conservation efforts.

4. **Technological Innovation:**

Introducing affordable and user-friendly technologies for water purification, efficient irrigation, and water recycling can significantly reduce water wastage and improve conservation efforts in rural areas.

5. **Policy Reforms and Governance:**

Strengthening governance structures, enacting clear policies, and fostering collaboration among government agencies, local authorities, NGOs, and community members are essential for effective water management and conservation.

6. **Economic Support and Incentives:**

Providing financial assistance, subsidies, or incentives for adopting water-saving technologies and sustainable agricultural practices can alleviate economic barriers and encourage investment in conservation efforts.

7. **Promoting Sustainable Agriculture:**

Encouraging the adoption of agroecological practices that minimize water usage, such as crop diversification, soil conservation, and efficient irrigation, can help reduce agricultural water demands.

8. **Partnerships and Collaboration:**

Foster partnerships between government agencies, non-governmental organizations (NGOs), private sector, and local communities to implement comprehensive water conservation programs. Collaboration can bring in resources, expertise, and diverse perspectives for effective solutions.

Addressing water conservation challenges in rural communities requires a comprehensive and collaborative approach that considers the complex interplay of social, economic, and environmental factors. By implementing tailored solutions, raising awareness, improving infrastructure, and promoting sustainable practices, it's possible to mitigate water scarcity and ensure a more secure water future for rural populations. The strategies to adapted for water conservation is summarized in following Table No 2

The steps taken to control/ ease water stress by government of India

Government's commitment to addressing water stress has been substantially comprehensive. While progress has been made, challenges persist, particularly in scaling up efforts, improving water use

Table: 2 Strategic options and key features	
Strategic Options	Key features
1.1 Shifting focus from 'water resource development' to 'water resource management'	<ul style="list-style-type: none"> a) Integrated Water Resource Management - coordinated and conjunctive use of all water, by location or by use (involves large scale planning and implementation) b) Ensuring that there is sufficient water in the entire system to support all the various uses of water and also that it is distributed equitably across space and users – technically complex c) Restructuring and strengthening existing institutions for better service delivery and resource sustainability d) Make the planning of big water resources projects interdisciplinary with all environmental, ecological and human concerns internalized e) Assessing the impact of such projects backed by concrete statute f) Developing set of laws, policies, capacities and organizations for water management by government g) Involving service providers in the overall water resources management authority – sustainability of local governance
Strategic Options	Key features Contd.....
1.2 Public Private Partnership	<ul style="list-style-type: none"> a) Considering the financial constraints and managerial limitations of governments, private sector involvement should be encouraged in water resources development and management projects b) Characterizing service sector by contracts between providers (public and private) and users with the description of the rights and responsibilities of both parties c) Mix of public and private financing for the provision of services based on the type of infrastructure – a partnership mode of relationship between public and private sector
2. Demand management and increasing resource use efficiency; rejuvenating tanks	<ul style="list-style-type: none"> a) Storing water in reservoirs to transfer it from the season/region of abundance to that of scarcity b) Minimizing the need for supply-side solutions through demand-management (restraining demand within availability) and using water resources efficiently c) Fostering consciousness of scarcity and promoting conservation and minimizing waste d) Modernizing the systems for allocating and monitoring surface and groundwater resources e) Efficiently managing water resources by implementing water entitlements, water pricing, accountable institutions and effective regulations f) Shifting government focus from traditional areas (of constructing and operating water supply infrastructure) and encouraging investments in environmental quality
3. Encouraging market for services	<ul style="list-style-type: none"> a) Encouraging private sector to compete for the right to supply water and irrigation services (service can be privatized but not the resource) b) Unbundling distribution functions in large irrigation systems and then providing distribution services to farmers through cooperatives and private sector

	c) Advocacy of privatization of water services (competition in provision of public services could improve efficiency)
4. Empowering users and Human Resource Development	a) Empowering users groups and gram panchayats b) Establishing formal water entitlement system and clarifying that water is publicly owned and water entitlement is usufructory, i.e, it is a right to use not a right to own water c) Encouraging community and local government to plan, implement, operate and manage water service schemes d) Interdisciplinary team work in water sector - investment in improving the quality and diversity of professionals engaged
5. Groundwater governance	a) Holistic concept which has to be multi-level, multi-actor and multi-instrumental b) Participation of state, people and even markets depending on the nature of the problem c) Energization of pumps and administration of its distribution and setting tariff for energy consumption d) Constitution of Central Groundwater Authority to monitor and regulate groundwater withdrawals
Strategic Options	Key features Contd.....
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2. Demand management and increasing resource use efficiency; rejuvenating tanks	g) Storing water in reservoirs to transfer it from the season/region of abundance to that of scarcity h) Minimizing the need for supply-side solutions through demand-management (restraining demand within availability) and using water resources efficiently i) Fostering consciousness of scarcity and promoting conservation and minimizing waste j) Modernizing the systems for allocating and monitoring surface and groundwater resources k) Efficiently managing water resources by implementing water entitlements, water pricing, accountable institutions and effective regulations l) Shifting government focus from traditional areas and encouraging investments in environmental quality
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efficiency, and ensuring sustainable water management practices across the country.

Some of the efforts by the Indian government:

Jal Shakti Abhiyan (JSA) - Water Conservation Campaign (2019) - Launched in July 2019, Jal Shakti Abhiyan mobilizes citizens' participation in water conservation and rainwater harvesting. It accelerates the implementation of water-related schemes and creates mass awareness about the importance of water conservation. JSA focuses on water-stressed districts and emphasizes the revival of traditional water bodies, watershed development, and afforestation. It has improved water storage, enhanced groundwater levels, and increased awareness about water conservation practices in several areas.

Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), Integrated Watershed Management Program (2015) - This program was launched in 2015 to provide end-to-end solutions for water management in agriculture. PMKSY enhances water use efficiency, promotes sustainable agricultural practices, and improves on-farm water management. Through watershed development, water harvesting structures, and efficient irrigation techniques, PMKSY has contributed to increased agricultural productivity, reduced water wastage, and improved livelihoods for farmers.

National Rural Drinking Water Program (NRDWP), Safe Drinking Water Access (2009) - NRDWP, initiated in 2009, provides safe and clean drinking water to rural

communities, focusing on water quality monitoring, creating water sources, and ensuring piped water supply to habitations. The program has significantly improved access to safe drinking water, reducing health risks and waterborne diseases in rural areas.

Namami Gange, Ganga Rejuvenation (2014) - The Namami Gange program was launched in 2014 to cleanse and restore the Ganga River, a lifeline for millions, involving initiatives such as sewage treatment plants, riverfront development, and public awareness campaigns. The program has improved water quality in some stretches of the Ganga and raised public consciousness about river pollution.

Atal Bhujal Yojana (ABHY), Groundwater Management (2016) - ABHY, initiated in 2016, focuses on the sustainable management of groundwater resources through community participation, emphasizing water conservation, aquifer recharge, and efficient groundwater use. This strategy has increased groundwater levels, reduced depletion, and enhanced water availability for irrigation and domestic purposes.

Pradhan Mantri Awas Yojana, Housing for All (2015) - While not exclusively a water-related scheme, PMAY acknowledges the importance

of access to basic amenities, including water supply and sanitation, in urban and rural housing. The scheme indirectly contributes to reducing water stress and enhancing overall living conditions by ensuring proper sanitation and water facilities in households. The Indian government is putting in considerable effort to curb water stress, but with an estimated population of 1,428,627,663 (in 2023), it also requires reinforcement and support from the people, especially in rural India.

Conclusion

Water conservation in rural communities is a complex and pressing issue that demands immediate attention and concerted efforts from various stakeholders. By understanding and addressing the challenges faced by rural areas in conserving water, implementing sustainable solutions, and fostering community engagement, we can strive towards ensuring water security, promoting socio-economic development, and preserving the environment for future generations. The holistic approach to water conservation in rural communities requires a combination of technological innovation, policy reforms, behavioral changes, and inclusive governance to achieve lasting impact and sustainable management of this invaluable resource.

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- Those contributions which are found to be as per the 'Guidelines for Authors' would be provided to some member/s on our panel for 'Peer-review'. In case found necessary, the feedback of the panel member/s could be provided to the concerned author for any modifications he/she may like to make based on the feedback and resubmit the work.
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Report Review

Reuse of treated wastewater in urban/peri-urban agriculture in India

Read the full report here:
https://www.niti.gov.in/sites/default/files/2023-08/Revised_Strategy-Paper-on-Reuse-of-Treated-wastewater-in-peri-urban-agriculture-in-India.pdf

No water, No life; Know water, Know life as the saying goes, highlights the crucial importance of water in sustaining life on this planet. Indeed there can be no life even for a few days in the absence of this central need of human beings, and all living species on earth. But this resource is running scarce in many parts of the planet in almost every country especially given the rapid urbanisation that we are witnessing. Several cities are running out of water in the face of adverse climatic conditions, unpredictable rainfall, contamination of natural water bodies, depleting groundwater table, and so on. Given this background several studies and reports have been put out by experts including our own NITI Aayog. The Report being reviewed is one such. It deals with

agriculture which is very appropriate since agriculture is the single largest user of freshwater – nearly 75-80% by some estimates and it is necessary to ensure that the needs of this sector are met because the well-being of our population depends on food.

This report could be of much interest to a wide range of scholars and practitioners connected with water, urbanisation, and agriculture. The Report addresses the very important aspect of treating and reusing of wastewater which can make a big contribution to water security of our country. The preface points out the critical role of water in economic growth of our country and the need to manage wastewater effectively. It points out that the presence of Nitrogen and Phosphorous gives wastewater an added advantage over raw freshwater when used for agriculture.

In the introductory paragraphs, the Report discusses the crucial role in the development journey of the nation; it estimates the water demand at between 973 and 1180 billion cubic metre (BCM) in 2050 while the utilizable freshwater resources could be about 1140 BCM. It quotes the 3 sectors in order of water usage by volume as agriculture, domestic and industry. Agriculture which accounts for about 90% of freshwater usage does so with 40% efficiency. Thereafter it discusses water availability and demand,

especially in the context of surging urbanisation. The authors point out that while earlier estimates placed the population in 2050 at 1500 million, we are likely to cross the figure in 2030 itself. This has implications for water demand. They also point out that urbanisation is also causing issues in water management. *'Sometimes, urbanisation comes at the cost of extinction of water bodies, shrinking of wet lands and disturbance of water balance. This often leads to long-hauling of fresh water from rural fresh water sources and subsequent conveyance losses'*, they note. They also estimate that there will be a major increase in the generation of wastewater in the years to come and therefore it is necessary to scale up the capacity for wastewater treatment, including collection and need for a proper framework for reuse of treated wastewater. Above data is well presented in tables, graphs, and charts. Importantly, the challenges to wastewater treatment are discussed next. Among them is the mixing of all kinds of waste water, lack of sewage networks, issues related to improper/lack of maintenance, giving less importance than it deserves and misconception on abundance of availability of fresh water. Thereafter the gap in treatment capacity is discussed. The treatment capacity is only one-third of the volume of wastewater generation. Also there is

significant gap between installed capacity and actual utilisation. The existing plus proposed STPs in the country as of 2020 would be able to treat volume of about 13.38 BCM annually while the projected wastewater generation in 2050 is about 47.67 BCM annually.

Thereafter the Report discusses the various treatment technologies and their merits. The number of STPs using each technology is tabulated. Also tabulated are the commonly used technologies and their potential usability for irrigation purpose for some restricted uses and for non-restricted uses.

Next the Report looks at the current use of treated wastewater. It states that wastewater is now being used for limited purposes such as irrigating parks, lawns and public places, and not so much for more productive purposes such as crop irrigation and groundwater recharge. The authors call for stepping up the use of treated wastewater for irrigation purposes in urban and peri-urban areas, i.e., in the spaces within cities and their surroundings. While the soil for agriculture has suffered degradation over the decades in terms of reduction in macro nutrients and micro nutrients, treated wastewater which is often rich in nutrients can be carefully used in agriculture so that the use of chemical fertilizers can be minimized. The

typical presence of nutrients such as Nitrogen and Phosphorous in the municipal wastewater has been tabulated along with other relevant information so that the reader can appreciate the benefits of using treated wastewater.

Use of treated wastewater

It is stated that in several countries, treated wastewater is considered as an important dimension of water resource planning. The Report quotes the experience of Morocco a country which has faced severe pressures on water availability and the resulting stress on agricultural output. Now in Morocco about 45% of the volume of treated wastewater is reused for agriculture.

Examples of Indian cities – Delhi, Chandigarh are shared. They state that Chandigarh is fully covered with treatment capacity and that the capacity is 25% more than the wastewater generated.

Policies, Standards and Regulations

Under this section, the Report states that the absence of standards and regulations is hindering the orderly development of a market for treated wastewater. They however quote the example of the state of Gujarat where its May 2028 'Policy for reuse of treated wastewater' lays out an ambitious target of treated 70% of all

wastewater by 2025 and 100% by 2030. Similarly, West Bengal's June 2020 Policy for treated wastewater is referred to. Karnataka, Chhattisgarh, Jharkhand, and Madhya Pradesh are among the other states that have crafted policies in respect of treated wastewater.

At the national level, the National Mission for Clean Ganga has come up with a national framework in consultation with NITI Aayog for the widespread and safe reuse of treated wastewater.

Way Forward

Coming to this section, the report emphasizes the need for demand creation for treated wastewater. Here the authors express concern over the fact it is difficult to make people pay for treated wastewater when fresh water is available almost free. Therefore it is necessary to state the specific advantages of treated wastewater over fresh water. This could be tried in some places where fresh water is not available in abundance. Other dimensions of the subject are discussed here. The use of GIS tools has also been discussed in detail.

Standards

As discussed in earlier sections, the Report recommends the formulation of standards of waste water using the

concept 'Fit-for-purpose'. Here it quotes the ISO 16075:2020 which contains standards for treated waste water for agriculture. The concept of creating “barriers” is introduced here. 'The barriers are methods to minimize the possibility of pathogens passing from the TWW to the vegetables or ingestion by the consumers. Irrigation barriers may be used to prevent contact between pathogens in TWW and humans who ingest irrigated food crops or may inhale aerosols produced during irrigation', as per the report.

Conclusion

In conclusion, the report emphasizes the need and advantages of using treated wastewater for productive purposes. While several states have policies in this regard, not all are encouraging, while at the same time not imposing a blanket ban either.

There is also an emphasis on the need for standards and monitoring of the quality of treated waste water.

Appendices include useful tables and charts.

Given the accelerating pace of urbanisation and the erosion in the inventory of freshwater sources in most cities, it is essential that we use this most valuable resource with much wisdom. Alongside is the need to reuse water for appropriate purposes. In this context this report by NITI Aayog is a valuable document, dwelling as it does on reuse of treated wastewater for agriculture in the Urban/Peri-urban spheres. Scholars, urbanists, planners, government departments and others will find it useful in their efforts to address this very critical aspect of life on earth.

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OBJECTIVES

The main emphasis of the Institute's work is to see that the local bodies can contribute more effectively to the development process and provide the citizens with better living conditions by meeting their aspirations in terms of required amenities, infrastructure and better environmental conditions, thus contributing to social and economic development of the society as a whole by better management of the human settlements. While these are the long-term objectives, the immediate ones are:

- ❖ To advance knowledge of the principles and practices of Local Government by conducting research and by organising training courses and programmes at various centres in India for officials and elected representatives in the local bodies.
- ❖ To strengthen and improve Local Government Institutions by improving their performance through education, orientation and bringing them together for common endeavor by organising specialised conferences, conventions and seminars.
- ❖ To make available a platform for members of local bodies and officials for exchange of views and ideas related to urban development and administration.
- ❖ To represent the views of local authorities supported by research work to the concerned higher authorities from time to time.
- ❖ To publish bibliographies, articles, books and other literature on matters of interest to local bodies.
- ❖ To publish journals, bulletins and other literature on different aspects of Local Government and on the working of Local bodies in different states.
- ❖ To undertake research studies in public administration, problems of local bodies and also in related topics of urban and environmental factors and arrange for their publication etc.
- ❖ To establish and maintain an information-cum-documentation service for local bodies.
- ❖ To undertake consultancy assignments in various areas of urban development and problems of local bodies with a view to improve and develop organisational, managerial and operational efficiency.

In view of the above, the Institute has been collaborating with the relevant government departments, Central and State, Universities, Organisations and Research Institutions. The work of the Institute covers several aspects involving a multi-disciplinary teamwork.

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