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Potential Influence of Climate Variability on Migration in Maharashtra

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Abstract

This research focuses on the core theme of Sustainable Development and the sub-theme of "Disappearing Islands, Primitive Migration to Climate Refugees". In light of the same, a case study of primitive migration from the Palghar district in Maharashtra, India to other urban settlements withing the state has been examined on the basis of which empirical research has been conducted. Furthermore, this research explores Primitive Migration within the purview of Climate Change and evidently concludes that the ecosystem is experiencing positive feedback loops that lead to unsustainable development. Various International Conventions on Sustainable Development have also been discussed such as the Intergovernmental Panel on Climate Change that estimates about 150 million climate refugees by the year 2050. Climate Change and Sustainable Development, Primitive Migration and its effects have also been discussed. The development that is currently taking place is unsustainable since there are no Laws or International Regulations that govern primitive migration. However, there certainly is a need to legislate primitive migration since uncontrolled influx of climate migrants into a state or country can hamper sustainable development with pressures building up to provide for an increased population. The number of climate migrants are increasing and it is the need of the hour to address the same. In light of the same, a concluding remark with a few recommendations have also been presented.

Keywords: *sustainable development, primitive migration, climate refugees, climate change, climate action, India, Maharashtra, Palghar district, key International Conventions on sustainable development, International primitive migration, effects of primitive migration*

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INTRODUCTION

Background Information

Sustainable Development & Primitive Migration in the Palghar District of Maharashtra

Sustainable Development is a widely used term today. Its context dates back to the Cocoyoc Declaration that essentially took into account the concept of Environmental Sustainability and Economic Development. [1] Later on in the year 1980, the Brandt Commission published certain details on sustainable development.[2] The Brundtland Commission Report on "Our Common Future" defines this often cited term as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations General Assembly, 1987, p. 43)" [3].

Furthermore, The United Nations General Assembly recognized 17 Sustainable Development Goals that are intended to be achieved by the year 2030. Two of these Goals are "Sustainable Cities & Communities" [4] and "Climate Action" [5], that form the basis of this research. These have been addressed with respect to primitive migration from the Palghar district (located in Maharashtra, India), to other urban settlements within the state.

"From primitive migration to climate refugees", this research examines the fate of natural environment with respect to migration. Primitive migration takes place as a result of

people's inability to cope with natural forces. [6] This brings an ecological push that forces the primitive migrants to flee due to sudden or gradual changes in the natural environment referring them as climate refugees (or in other words 'climate migrants') [7].

Three figures have been illustrated below, i.e, Map 1, one the country of research, secondly, Map 2, the state of research, and lastly, Map 3, the district of research to facilitate a clearer understanding of the locations that the researcher focuses on.

Geographical Locations of the Area of Research

Map 1: *Political Map of India (Country of Research) [8].*

Map 2: *Political Map of Maharashtra (State of Research) [9].*

Map 3: *Political Map of Palghar (District of Research) [10].*

Primitive Migration within the Purview of Climate Change

"Climate is the average weather pattern over many years for a location on Earth." [11] Climate change is a long-term change and the only environmental issue that has stirred much debate and discussion from time to time. In the recent years, this discussion has escalated on an alarming rate with the awareness amongst people of increased average global temperature.

"An Environmental Value System is a worldview or paradigm that shapes the way an individual, or group of people, perceives and evaluates environmental issues." [12] There has always been a clash between the ecocentric (viewpoint that puts ecology and nature as central to humanity) [13], technocentric (viewpoint argues that technological developments can provide solutions to environmental problems) [14], and anthropocentric (viewpoint argues that humans must sustainably manage the global system) viewpoints. There is neither mutual conscience on the cause of rise in global temperature, nor on what we can do to mitigate this cause and its effects.

The vast majority of scientists accept that global rise in temperature directly correlates to climate change. However, a minority opinion questions this cause and effect correlation. This is one of the reasons cited that express why predicting climate change is extremely difficult.

There are two mechanisms that work in this ecosystem. One is the positive feedback mechanism, creating positive feedback loops, and the other being the negative feedback mechanism creating negative feedback loops. These mechanisms have been discussed with the help of the two illustrations Diagram 1 & Diagram 2 that follow:

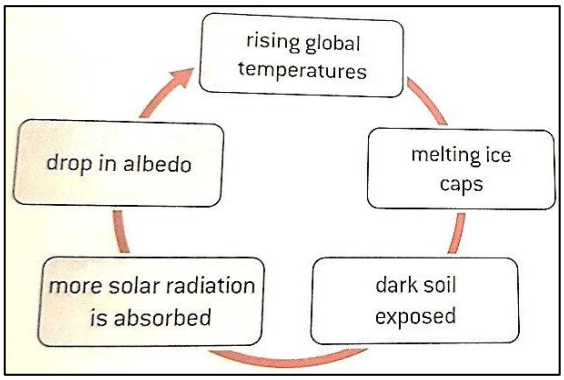

Diagram 1: *Positive Feedback Mechanism [15]*

The rise in global temperature results in reduced albedo (ability of the Earth's surface to reflect solar radiation) that ultimately leads to global rise in temperature.

Conversely, negative feedback mechanism interprets the same differently as depicted by the figure below:

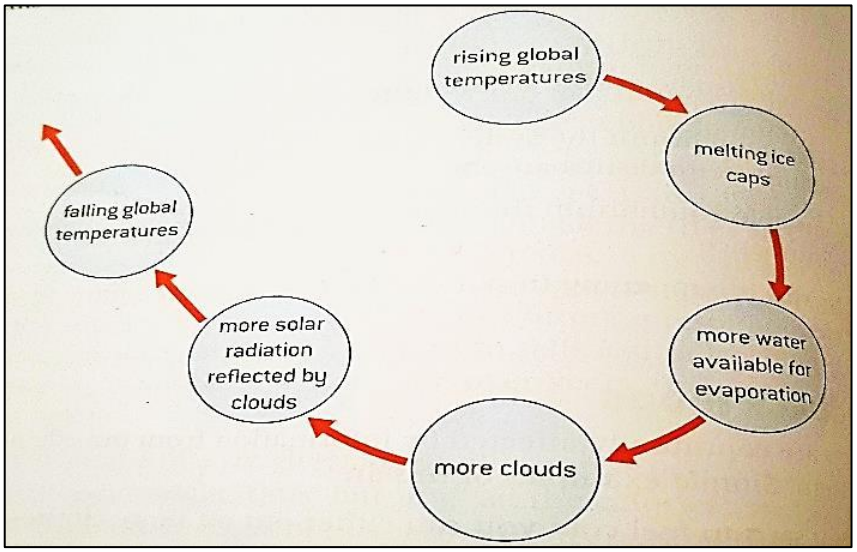

Diagram 2: *Negative Feedback Mechanism [16] 66666.*

Increase in global temperatures causes ice caps to melt, that further increases the rate of evaporation and cloud formation. Thus, more sunlight is reflected and global temperatures fall.

The question that we are now to understand, is whether climate change is an alarming sign of positive feedback mechanism that will amplify the change to reach a new tipping point where, a new equilibrium is reached, or whether the operation will reverse itself and counteract deviation to achieve a stable equilibrium.

A number of implications of climate change have been observed since the temperature first increased by about 0.85 degree Celsius since 1880 and the adversities became prominent since 1980 [17]. One of these implications addressed human migration. To combat the adversities of water scarcity that in turn affect agriculture, primitive migration takes place. Global migration of millions of climate refugees will result from the ecological push that forces the inhabitants of a particular place to migrate. This would in turn impact nations' allocation of resources, services and state economic and security policies and ultimately deter nation's from achieving sustainable development.

This research addresses the same issue in context of a case study of seasonal migration that takes place every year from the Palghar district in Maharashtra, to other urban settlements within the state, such as Pune, Mumbai and Nasik (to name a few), that have been depicted on the Map of Maharashtra.

TIMELINE OF KEY INTERNATIONAL CONVENTIONS ON SUSTAINABILITY

(1974) Cocoyoc Declaration

This declaration attempted to synthesize the theories of sustainable development and economic development [18].

(1980) Brandt Commission

This commission published the beginnings of sustainable development [19].

(1982) UN World Charter for Nature

The goals and objectives embodied in this charter suggest the need for substantive and protection from the adverse impacts of social and economic development [20]. Furthermore, it laid down five essential principles:

1. To respect nature and its essential processes [21]
2. To safeguard habitats of all life forms and not compromise the genetic viability of Earth [22]
3. All areas on the surface of the Earth shall be subject to the principles of conservation with special emphasis given to ecosystems of rare and endangered species [23]
4. All resources utilized by man (ecosystem, organisms, land, marine, and atmospheric resources) shall be managed to yield optimum sustainable productivity keeping in mind the sustainability of other ecosystems with which they co-exist [24]
5. Secure nature against hostile activities and destruction caused by warfare [25]

(1987) Brundtland Commission

The commission released a report called "Our Common Future" that first defined the term sustainable development. It affirmed that sustainable development must rest on political will and that any step for change must be taken consciously by keeping in mind the realities of today that will not affect the options available to the future generations [26].

(1988) Intergovernmental Panel on Climate Change (IPCC)

The IPCC was set up by the United Nations Environment Programme (UNEP) and the World Meteorological Organization in 1988.[27] The IPCC estimates about 150 million climate refugees by the year 2050 [28].

(1991) Caring for the Earth: A Strategy for Sustainable Living

This strategy was updated and launched in 65 countries that focused on promoting sustainable use of natural resources and sharing resources amongst the world population [29].

(1992) Rio Earth Summit

The world leaders agreed to implement a sustainable development agenda – Agenda 21

and the Earth Council Global Biodiversity Strategy [30]. The main objectives of this strategy were:

1. Conserving biological variation
2. Sustainable use of its components; and
3. To equitably share the benefits of the utilization of genetic resources

Agenda 21 was intended to take place in full swing at he national, international, and even local level [31]. As per chapter 28 of the document, some governments advised local authorities to devise plans to implement the same at the local level [32]. These were referred to as Local Agenda 21 or LA 21 [33].

(2000) UN Millennium Summit: Millennium Development Goals (MDG's)

The aim of these goals was to set time bound and measurable targets of combating poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women by the year 2015 [34].

(2002) the Johannesburg Summit on Sustainable Development

This summit took place at Johannesburg, but little no action was observed out of its deliberations [35]. Its objective was to consolidate the Rio Earth Summit [36].

(2005) World Summit, New York

This summit outlined a series of priorities and recommended that each country devise its own measures to conserve natural resources for the long-term welfare of humans [37].

(2013) Rio + 20

A paper by the title "The Future We Want" was published that entailed the methods of obtaining a green economy and improving cooperation for sustainable development [38].

CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT IN INDIA

The links between climate change and sustainable development are strong. The Rajya Sabha published a paper in the year 2008 titled: "Climate Change: Challenges To Sustainable Development In India" [39] that addresses key concerns such as:

Climate Change and the World's Poor

Vulnerability to climate change has strong linkage with poverty [40]. Climate change affects the poor adversely that leads to demographic dislocations, and transforming human settlement patterns [41]. It is sheer irony that the major source of polluters are the developed nations, however the impacts of climate change realized due to pollution are being faced by the developing nations, especially the rural communities.

Impacts of Climate change on Food Security and Indian Agriculture

Agriculture is the primary source of food and livelihood to the majority Indian population. The Third Assessment Report of the IPCC, 2001 observed that climate change would adversely affect the developing nations of the world, especially Sub-Saharan Africa and Asia in terms of reducing the agricultural products. This directly hints at vulnerability to lack of food security.

Water Stress and Water Insecurities Resulting from Climate Change in India

It has been analysed that by this year, 2020, between 75 and 250 million people would be projected to increased water stress due to climate change [42]. This contributes to food insecurities and poses a challenge to the developing nations to combat such adversities. The rise in population also demands for more consumption, whereas the natural resources remain finite proposing unsustainable development. Statistics show that the agricultural sector is the largest consumer of water, with the consumption rate of 83% in India. [43] This poses a threat to the future generations and hints at food and water crisis.

Climate change and Health

Each year, about 800,000 people lose their lives from causes attributable to air pollution, 1.8 million people from diarrhoea resulting from lack of access to clean water supply, sanitation, and poor hygiene, 3.5 million; people from malnutrition and approximately 60,000 people in natural disasters [44]. Climate change directly impacts human health. Furthermore, its effects on food and water security result in loss of lives, especially those

of infants from malnutrition, and other chronic illnesses.

India is actively pressing on the enforcement of the objectives as enlisted in the *United Nations Framework Convention on Climate Change (UNFCCC)* and is a partner to the *Asia Pacific Partnership on Clean Development and Climate* that complements the efforts under the *UNFCCC* [45].

Apart from the same, under India's nodal agency for climate change, which is The Ministry of Environment and Forests, the country adopted the National Environment Policy, 2006 to create awareness amongst the population on climate change and the measures that can be implemented to mitigate the effects of climate change [46].

India's *National Action Plan on Climate Change (NAPCC)*, was unveiled on the 30th of June, 2008 that lays down the priorities and future actions of the government with respect to eight national missions (solar mission, energy efficiency, sustainable habitat, water, Himalayan ecosystem, green India, eco-green agriculture and knowledge).

Nonetheless, it is imperative to understand that the adversities of climate change are increasing each day and a flexible mechanism to address the same must be activated. Furthermore, the goals set to combat these adversities must be achieved.

LITERATURE REVIEW

The researcher has perused various reliable sources of information that discuss the adversities of water shortage and unsustainable use of land making agriculture unviable for most months of the year. Malnutrition amongst the population at Palghar, especially children is the highest. Following are the sources that the researcher has relied on to gather facts and pieces of valid information.

Palghar: Parents Migrate to Earn Bread, Undernourishment Kills Children [47]

This newspaper report provides facts and figures of the districts' tribal population. Child mortality deaths of 1351 children below the age of six alone, have been recorded in the district owing to poverty, water scarcity, high unemployment and illiteracy. A feasibility report submitted to the government identified that investment of Rs. 12 crores by the government on building water storages is the need of the hour that can curb the displacement of workers. They can practice agriculture and earn their living without having to migrate. Instead, the government resorted to other measures to generate employment and help the inhabitants sustain their livelihood.

Driving Change in Jawhar [48]

Inhabitants of the district of Palghar, migrate every year, during the summer months from this region to other urban settlements within the state (such as Mumbai, Pune, or Nasik to name a few), as a result of water scarcity. [49] The outcome of this adversity is individuals, especially children being prone to acute chronic illnesses, and malnourishment due to agriculture becoming unviable in this region. This forces the inhabitants to migrate in order to earn a living, as well as lead a healthy life.

Undernutrition among Tribal Children in Palghar District, Maharashtra, India [50]

This journal article examines how poverty and food insecurity continues to grow in this district. Loss of traditional forest-based livelihood and forced migration to urban settlements for employment in exploitative jobs further hampers the ability of tribal households being able to crawl out of destitution, and the crippling cycle continues.

This accounts for primitive migration within the state. The objective of this research is to discuss whether primitive migration leads to unsustainable use of land, instigating pressures on cities and communities to provide for these individuals and whether there is an immediate cause of action arising to curb the adversities of climate change. Moreover, it also aims at discussing whether Laws must be formulated at the national and international level to address primitive migration as a reason for migration.

RESEARCH METHODOLOGY

The aim is to conduct empirical research in an attempt to gain people's insights on the subject matter that will further help in suggesting potential solutions the issue at hand.

The relevant variables involved are:

Independent Variable
The core theme of this empirical research - Sustainable Development

Dependent Variable
The sub-theme of this empirical research - "Disappearing Islands: Primitive Migration to Climate Refugees"

Controlled Variable
The state and the district chosen to conduct empirical research – The state of Maharashtra, in India and the district of Palghar located in the state of Maharashtra.

Uncontrolled Variable
Uncertainty with respect to the answers obtained for the survey.

The methodology applied is as follows:

- Collection of data for the empirical research is done by conducting a survey
- The sampling strategy employed is opportunity sampling wherein the survey was conducted online by circulating a google form to a number of known persons who reside in Maharashtra, or used to reside in the state and have now moved out, and those persons who originally hail from another state in India and have moved to Maharashtra with the objective of gaining vivid insights on this issue.
- The survey includes pre-briefing and post-briefing for the knowledge of the surveyees (attached in Appendix 1 for reference) and no surveyee was coerced, misguided or falsely made to take the survey
- The survey responses have been closely analysed with the help of graphs
- Additionally, secondary sources of information have also been referred to facilitate better understanding of the issue, thereby leading to effective research

Risk Assessment
While conducting the research, authentic sources of information were relied upon so as to not be misguided in any way

Ethical Considerations

- No personal information about the surveyee has been collected
- No findings will be misrepresented or distorted
- Misleading methods of data collection are not resorted to
- No misleading questions are being asked along with complete detachment from personal biases
- The responses have been collected from those persons who willing consented to take the survey

RESULT ANALYSIS

The sample size of the responses to the survey is 31, out of which 26 people who have responded are residents of Maharashtra and the six other surveyees hail from Delhi, Hyderabad, Karnataka and the state of Tami Nadu (Figure 1).

The following graphs, depicts the same:

It is also imperative to understand if the surveyees are aware of the area of research, in essence the Palghar district situated in Maharashtra. The responses have been depicted in the graph below that reveal majority of the surveyees are aware of this district (Figure 2).

In context of the sub-theme "Primitive Migration to Climate Refugees", the surveyees were also asked if they were aware that inhabitants of this district migrate seasonally each year to urban settlements such as Mumbai, Pune, and Nasik in order to combat the adversities of nature, such as water scarcity, that makes agriculture unviable leading to malnutrition among children and other such chronic illnesses that affect the livelihood of these migrants (Figure 3).

The graph below depicts the responses to the same:

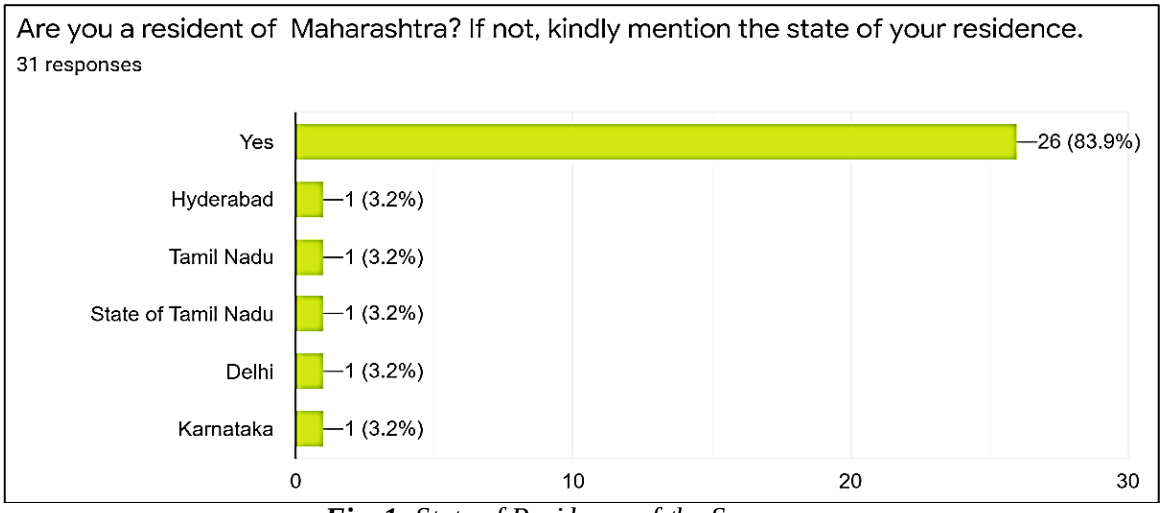

Fig. 1: *State of Residence of the Surveyees.*

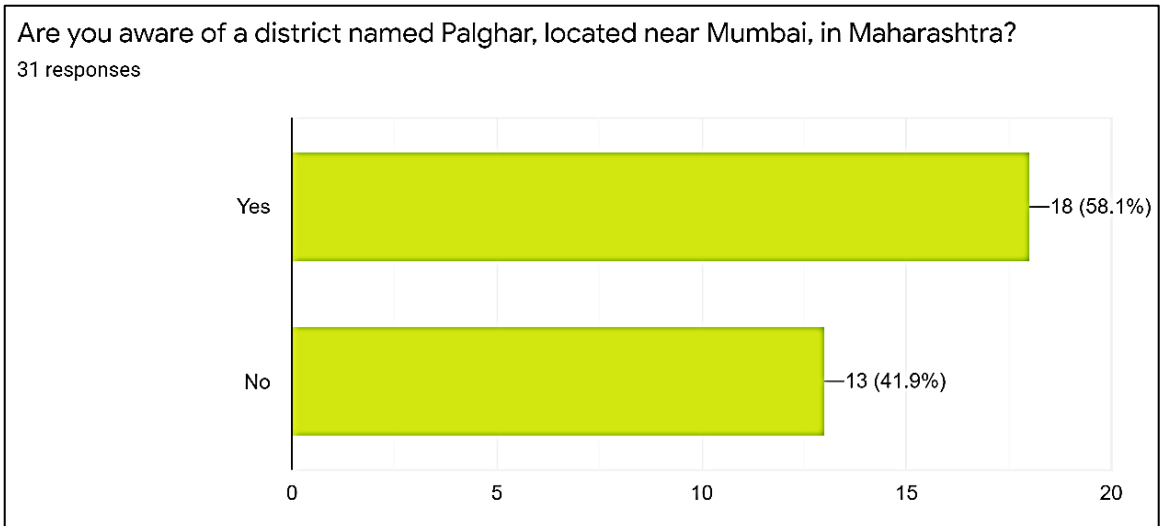

Fig. 2: *Awareness amongst the Surveyees about the Palghar District, Maharashtra, India.*

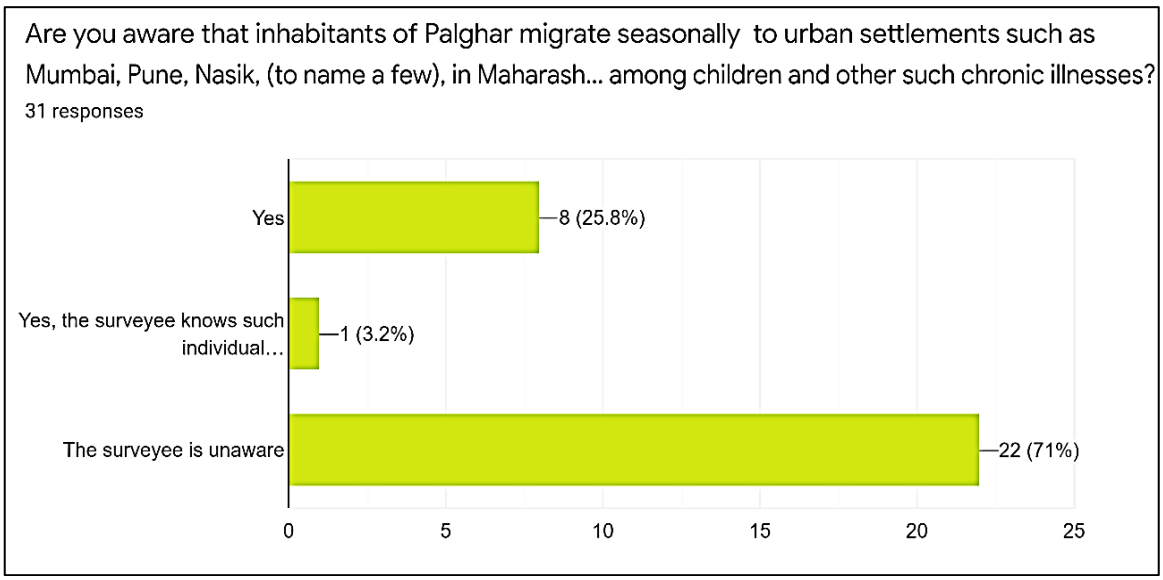

Fig. 3: *Awareness amongst Surveyees about annual Seasonal Migration from the Palghar District.*

Out of the 18 surveyees who are aware of this district named Palghar, only 9 surveyees know about primitive migration that takes place seasonally. One of the surveyee also knows of such individuals who have migrated.

Furthermore, the surveyees were also asked to provide their opinion on the time of the year during which they think primitive migration might place. The graph below depicts the same:

24 surveyees (accounting for 77.4% of the sample space of 31 surveyees) have correctly identified summer months to be the season of primitive migration. During this time of the year, water shortage is acute and with this paucity, practicing agriculture becomes unviable. During the other months of the year, rainfall is sufficient that helps these migrants to sustain a livelihood, though still in dire situations with the rate of malnutrition, especially in children below the age of six, increasing each year [51].

The surveyees' standpoint on the view that "Does primitive migration promote economic growth, provide employment opportunities and prove to be beneficial to the economy in any way?" was gathered and a range of responses were obtained.

The graphs below (Figure 4 & Figure 4(a)) depicts the responses:

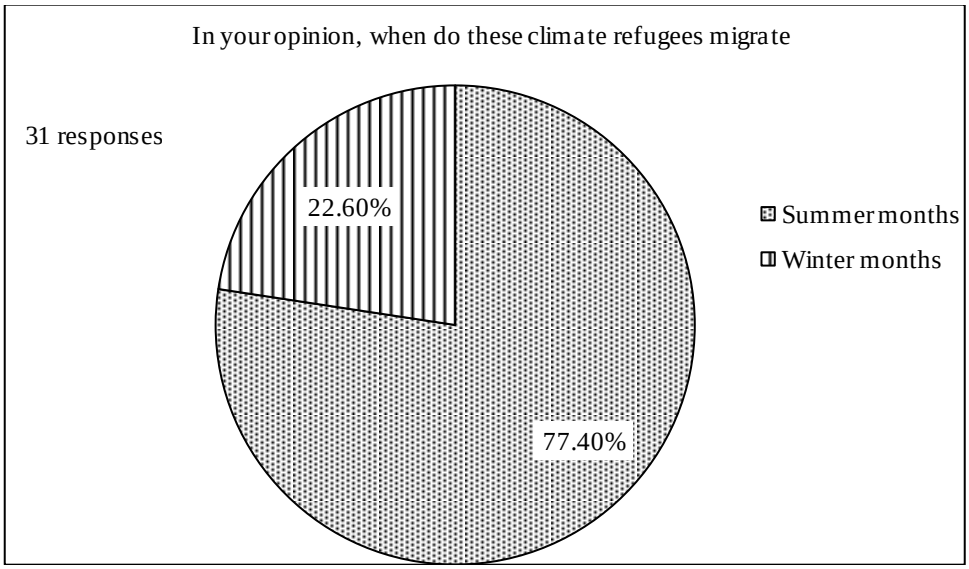

Fig. 4: *Awareness amongst Surveyees about the Season during which the inhabitants Migrate.*

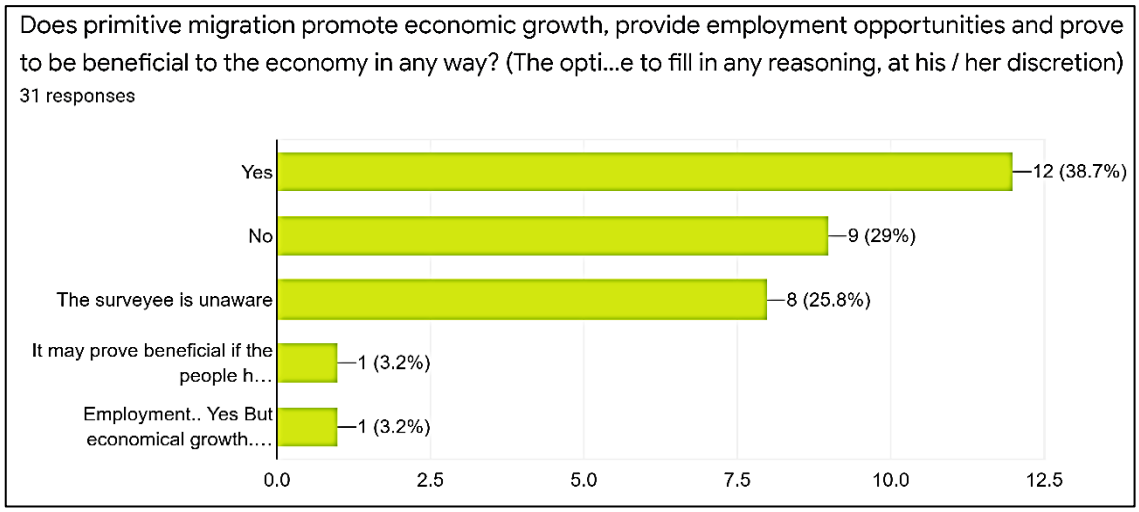

Fig. 4(a): *Surveyees opinion on Primitive Migration as a Boon for the Economy.*

12 surveyees agree with the opinion that primitive migration favours economic growth. 9 surveyees differ from this view, while 8 are unaware of the implication of primitive migration on economic growth. One of the surveyees provided a view that states that primitive migration may prove to be beneficial if the migrants have a good educational and medical background. However, these migrants barely have the resources to acquire good education and are mostly tribal people who migrate to earn for a living. Another viewpoint that was put forth by a surveyee was that, primitive migration can provide employment opportunities to the migrants, however this would not contribute to economic growth. This stance supports the argument that despite being employed for a particular season, their livelihood is not improving, children still suffer from health-related diseases and the economy deteriorates rather than growing.

Conversely, the surveyees' opinion was also gathered on the viewpoint whether, "primitive migration burdens the land in any way, with pressures to provide for an increased population, leading to unsustainable use of land?" (Figure 5)

Majority of the surveyees supported this view, and a few stated that they were unaware of whether primitive migration leads to unsustainable use of land, while two surveyees' differed and stated that primitive migration would not lead to unsustainable use of land.

The graph below depicts the same:
With respect to unsustainable development, 29 surveyees' provided their opinion that it is the need of the hour to address this issue, (Figure 6) while 3 surveyees' stated their view otherwise. One of the surveyees' has responded with a "yes" as well as a "no".

The graph below depicts the same:
Furthermore, a range of responses were obtained to the question, "Does primitive migration hamper sustainable development?" (Figure 7).

The graph below depicts the same, wherein 19 surveyees' state their opinion in favour of the argument, 6 surveyees' state their opinion otherwise, further 6 surveyees' are unaware of the same and one of the 19 surveyees' rightly pointed out that this is a crippling cycle, wherein primitive migration, hampers sustainable development, which in turn negatively affects the environment and the same leads to primitive migration and this cycle continues.

The graph below depicts the responses:
In light of the 17 Sustainable Development Goals that were set in the year 2015, by the *United Nations General Assembly*, the two in focus pertaining to this research are, "Sustainable Cities & Communities" and "Climate Action". The surveyees' were asked for their opinion on whether the state of their residence takes these into account while considering development (Figure 8)

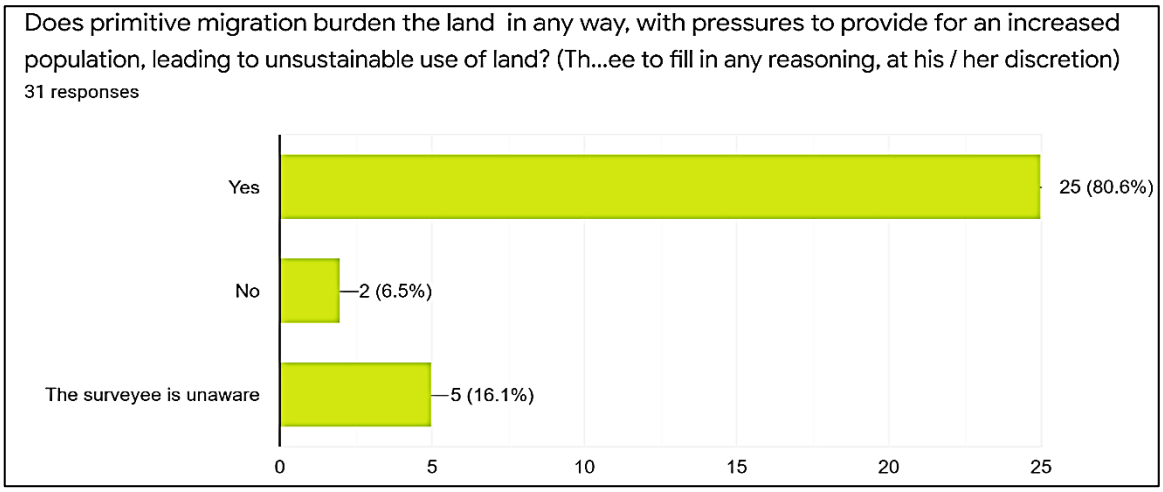

Fig. 5: *Setbacks of Primitive Migration in the opinion of the Surveyees.*

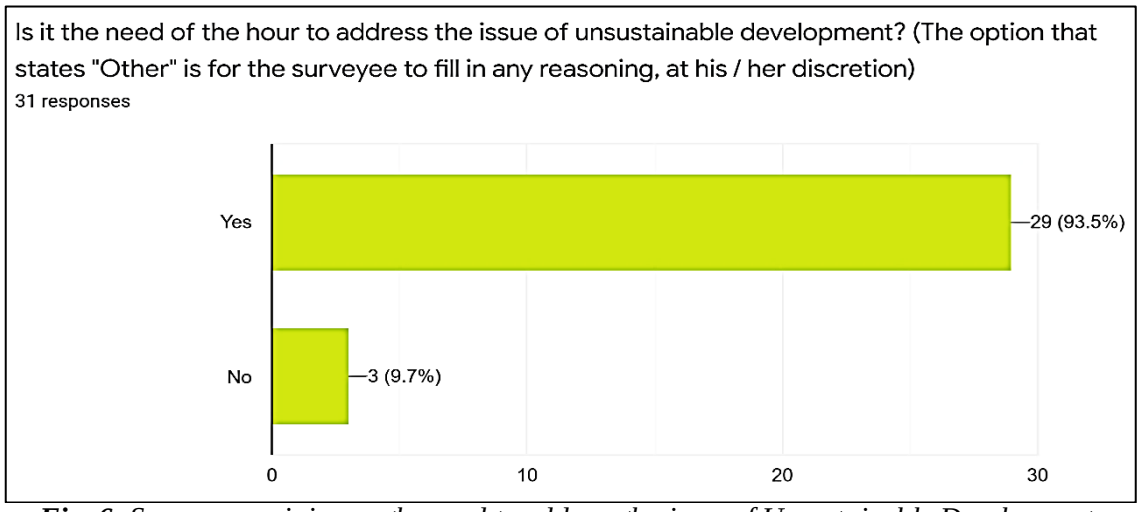

Fig. 6: *Surveyees opinion on the need to address the issue of Unsustainable Development.*

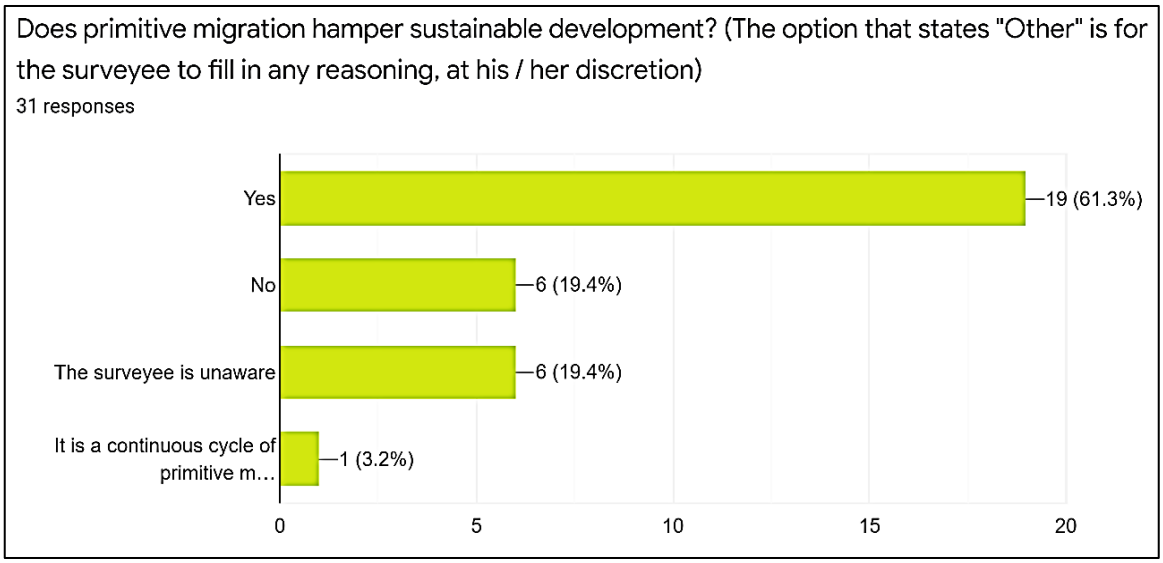

Fig. 7: *Surveyees opinion on Primitive Migration as a bane to Sustainable Development.*

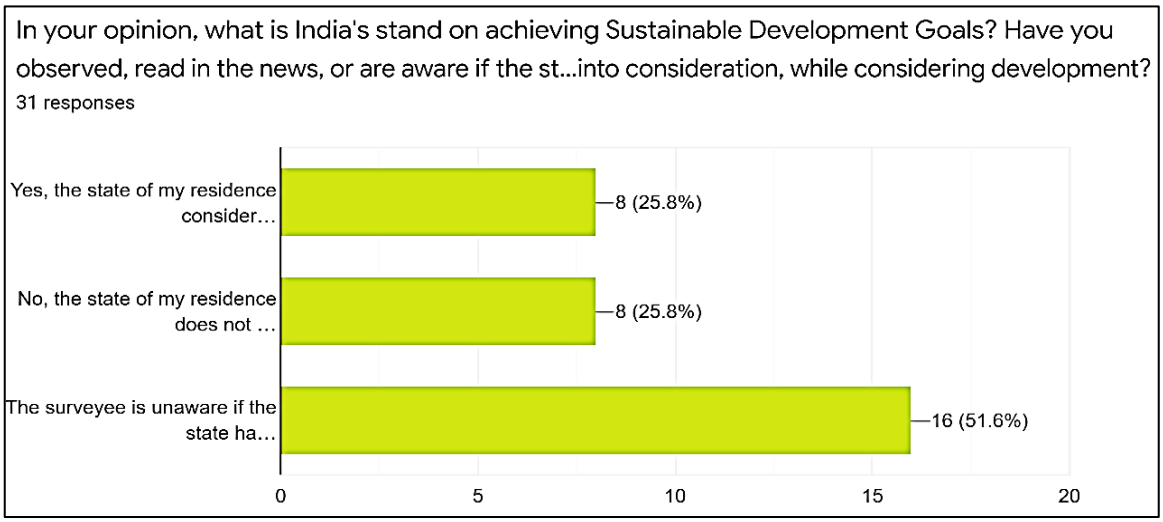

Fig. 8: *Surveyees Opinion on Whether their State of Residence considers SDG's while Considering Development.*

The responses are depicted in the graph below: The response to this question is quite balanced. 8 surveyees' believe that the state of their residence takes cognizance of the sustainable development goals while considering development. 8 surveyees' respond otherwise. One surveyee has responded both ways and 16 surveyees' are unaware if the state of their residence takes cognizance of the sustainable development goals while considering development.

Lastly, the surveyees' were asked, if primitive migration should be considered as a ground for migration nationally as well as internationally (Figure 9); and whether Laws must be formulated at the national and international level to address primitive migration (Figure 10).

Firstly, 20 surveyees' believe that primitive migration must be considered as a valid ground for migration, and one of these 20 surveyees' has provided the reasoning that lack of space in urban areas also leads to migration. This may be due to unsustainable use of land and unplanned urbanization that provides an ecological push to the inhabitants of that area to migrate. 9 surveyees' respond otherwise. One surveyee is of the opinion that the situation decides whether this can be considered as a valid ground for migration or not, while another surveyee is of the view that it may be considered as a ground for migration.

The graph with the responses is depicted below:
Secondly, 25 surveyees' believe that Laws must be formulated to address primitive migration at the national and international level. 6 surveyees' provide their view otherwise. One surveyee is of the standpoint that this depends upon the situation of the individual or the family and that there is no need to formulate any Laws of addressing primitive migration. While another standpoint addresses that laws must be formulated to address the cause of primitive migration, which is climate change.

The graph with the responses is depicted below:

INTERNATIONAL PRIMITIVE MIGRATION

With the scarcity of land and water in some areas of Bangladesh, there is huge influx of immigrants in India from Bangladesh [51]. Climate change has made rain patterns erratic and the residents of the country who are affected by this are forced to migrate [52]. Furthermore, diminishing wetlands in the region of Sundarbans also pose a great threat of causing flooding due to increase in sea levels, and the families residing nearby fear their houses being washed away [53]. The National Geographic report also suggests that climate change poses a huge risk of natural disasters, making people want to go to safer areas.

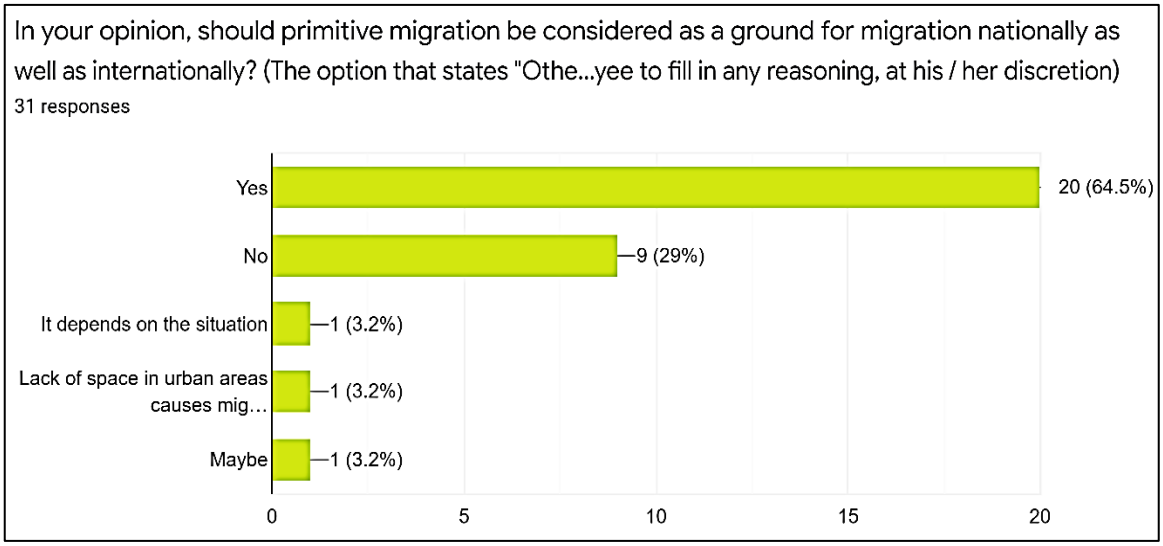

Fig. 9: *Surveyees opinion on whether Primitive Migration must be Nationally as well as Internationally recognized.*

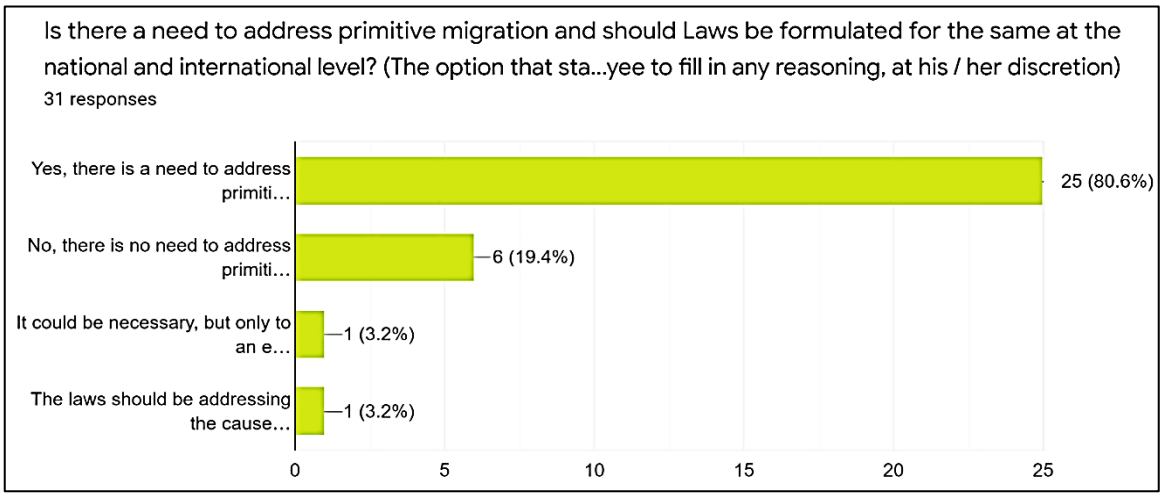

Fig. 10: *Surveyees opinion on the need to formulate Laws to govern National and International Primitive Migration.*

One-third of the agricultural land is unproductive due to salinity caused by the diminishing wetlands around the region leading to increase in high-tides that destroy the source of livelihood for most people, which is agriculture [54]. Thus, people are forced to migrate out of this region to sustain a living.

EFFECTS OF PRIMITIVE MIGRATION

Friedrich Ratzel, a renowned scholar known to have conducted numerous studies on migration focused on natural environment as a determinant for migration. However, primitive migration is no longer considered as a ground for migration, despite large-scale migration occurring due to this reason that adversely impacts the host area since it has to provide for an increased number of persons. This suggests that more resources need to be allocated in order to provide for a larger population. However, the resources are finite in nature and must be sustainably used keeping in mind the future generation as well. The immediate impact of such migration is deforestation. Forests are being cleared to provide for the increased population. This in turn affects the water cycle, results in increased exposure of the Earth's surface to the sun, reducing albedo and forms a crippling cycle increasing the risk of adversities resulting from climate change.

While one may argue that primitive migration is also a source of employment, and may even lead to economic growth in the urban settlements, it is without any growth in the rural areas that are the most hit by such adversities thus violating the principle of sustainable development.

Therefore, the immediate and adverse impact of primitive migration is unsustainable development and strategies must be implemented to mitigate this.

CONCLUSION AND RECOMMENDATION

In India, evidence about climate migration is not widespread, however the number of climate refugees is definitely increasing. [55] It was in the 64th round of the *National Sample Survey Office (NSSO)* – 2007 to 2008 that identified natural disasters as one of the reasons for migration in India, however the figures were as low as 13 per 1000 migrant households [56].

The rise in sea-level in the Sundarbans region is already displacing people. Cities lack adequate infrastructure to cope with the increase in population and this poses an urban development challenge. Migrants may be forced to live in cramped settlements with lack of access to clean water, sanitation and health care that completely defeats the purpose of them migrating to cities in the first place.

With, right to live in a clean and pollution free environment being recognized as one of the Fundamental Rights in India under *Article 21* of the Indian Constitution, it is imperative that we consider the need for climate action urgently and take steps towards sustainable development.

The researcher hereby recommends certain measures that can effectively help cities combat primitive migration. These suggestions are being given on the basis of the survey conducted as well as legal perspectives that must be considered.

- It is the need of the hour to address the issue of primitive migration. Cities must recognize displacement due to climate change and other natural disasters in order to devise an appropriate urban development policy that takes cognizance of this issue and promotes sustainable development while also catering to the needs of the climate migrants.
- Primitive migration must be considered as a ground for migration and Laws must be formulated on the national as well as international level especially owing to the adversities of climate change and the gradual increase in the percentage of climate refugees.
- Cities can initiate urban-rural linkages programme in order to provide for sustainable development in all sectors of the economy. This initiative can promote economic growth wherein the rural population is provided assistance by the urban centres for access to clean water, sanitation and health-care. Although, it may be argued that it is the government's role to provide for the same, the issue a hand is a big one with quite adverse impacts, and once the ecosystem attains a tipping point, positive feedback loops would amplify the change and irreversible damage would have been caused. Thus, citizens can work collaboratively with the government to achieve desired results at the earliest.
- There exists an urgent need to internationally and nationally recognize climate refugees. Although, the current rates of displacement due to climate adversities is low, this number is expected to rise in the future.
- Each state can have special Laws framed owing to the nature and number of migrants that enter the state annually. Additionally, legislations must be formulated on a national level to control the number of international migrants entering the nation thereby ensuring checks and balances within the state and ensuring that the natural resources are not depleted at a faster pace and the economy can prosper sustainably.
- Countries can also take the initiative of addressing this issue internationally by setting up conferences, or panels for discussion that ensures interdisciplinary action on the same.

These recommendations are not exhaustive; however, they address the need of the hour and must be considered.

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