

The Impact Of El Nino on India.

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Abstract- El Nino is the warm phase of El Nino Southern Oscillation (ENSO) which is the abnormal warming of the surface water and is associated with a band of warm ocean water in Central and eastern Equatorial Pacific region. The La Nina is about abnormal cooling of the sea surface water in the same region.

By this paper we are studying the effect of El Nino on social and economic dimension of the Indian people. This has also impacted the cultural life of the Indian people because of the direct impact on the monsoons.

This paper is basically studying the social and cultural drastic changes because of El Nino.

Key Words- El Nino, La Nina, Pacific Ocean, Central, Eastern Equatorial.

INTRODUCTION.

El Nino is the phenomenon which happens in the Central and eastern Pacific Equatorial Pacific Ocean which initially warms the oceanic water on the surface. When we talk about India, an emerging nation which is dependent on agriculture, which in-turn is totally dependent on the monsoon. This exists in mostly rural India and about 70% of Indian population lives in rural India. This kind of cataclysm directly impacts the social and economic life of rural population. The Indian rural population is about 95% dependent on agriculture and the rest on animal rearing, fisheries and other MSMEs. When the rain or monsoon is uneven because of El-Nino then this kind of uneven monsoon leaves the impact on the agriculture and agricultural will directly impact on the social, economic and cultural life of the rural Indian population. This is not restricted just to the rural population but also impacts the urban population as well.

Historical Perspective.

El Nino has happened in two-to-three-year intervals from last 300 years, but never has had a significant impact. In early holocene epoch 10,000 years ago, the evidence of strong El Nino is documented.

In 1876 -77, extreme weather was produced by El Nino gave rise to most deadly famines of the 19th century. This famine, alone in China killed up to 13 million people.

In 1892, the climate change occurred which was noticed by Camilo Carrillo who told to geographical society congress in Lima that Peruvian sailors named the warm South flowing current "El Nino" because it was most noticeable around Christmas.

In industry Of Guano, which is dependent on biological productivity of the sea has highly been affected by El Nino.

In 1888, Charles Todd suggested the droughts of India and Australia tended to occur at the same time.

In 1894, An El Nino connection with flooding was reported by Victor Eguiguren.

In 1924, Gilbert Walker had coined the term "Southern Oscillation".

In 1990 -95, the El Nino was unusual and occurred in the rapid succession.

The event temporarily warmed the average temperature by 1.5°C, compared to usual increase of 0.25°C associated with El Nino Event.

Major consequence of the El Nino is Coral bleaching which is common worldwide, with all regions suffering large bleaching.

During the French Revolution, the El Nino impacted in high quantum which caused poor crop yields in Europe and led to the French Revolution because of starvation during 1789 to 1793.

Types Of El Nino Events.

There are different kinds of El Nino Events, they are

A) Canonical Eastern Pacific.

Strongest sea surface temperature anomalies which is associated with the canonical Eastern Pacific event, located off coast of South America.

B) Modoku Central Pacific.

Located near International Date Line, during the entire event, area of the surface temperature rise has seen changes.

The above both came in lime light because of the heavy affect.

There are other kinds of El Nino Events which could be classified based on the surface temperature of the tropical Pacific Sea.

El Nino is accompanied by the higher air pressure in the western Pacific and low air pressure in the eastern Pacific.

The cool phase of ENSO is Spanish: La Nina, lit. The Girl with SSTs in the eastern Pacific below the average and air pressure high in the eastern Pacific and low in the western Pacific.

The El Nino applied to an annual weak warm ocean current which ran southwards along the coast of Peru and Ecuador at about Christmas time.

Social Impact Due To El Nino.

El Nino reduces the rainfall during southwest monsoon season, impacting on the agriculture and water resources. This kind of impact creates drought like conditions, affecting the crop yields, live stocks and the food production.

The monsoon season is quite far away and the rabi season is over. India will inevitably experience a severe pre and post monsoon phenomenon.

An agrarian economy, India depends on the monsoon for good crops. Agriculture constitutes 20 % of India's GDP.

Economic Impact Due To El Nino

The ocean warming and reduction in the easterly trade winds limits upwelling of cold nutrient rich deep water and economic effect on local fishing for an international market can be serious.

El Nino could be affected commodities prices and the Marco economy of the different countries which would have been constrained the supply of rain driven agriculture commodities, reduce the agricultural output, construction and service activities, create food price and generalised inflation and be triggered social unrest in the commodity dependent poor countries that primarily rely on the imported food.

Cultural Impact Due To El Lino.

When there is social impact, then there is also cultural Impact. The social impact due to agricultural downfall due to drought like conditions. Due to drought, the culture and life style of the people are highly impacted.

Due to drought, there is sort fall of water, foods, which would highly be impacted on cultural and social development of the people.

Cultural impact would be

- 1) **Clothes and wearing would be changed due to drought and agricultural downfall.**
- 2) **The food scarcity due to drought Impact on the cultural celebration and traditional outlook.**
- 3) **The festival and events would not be celebrated due to monsoonal effect.**

Ecological Impact.

When we talk about the terrestrial ecosystems, rodents' outbreaks were observed in the northern Chile and along the Peruvian coastal desert (1972 -73).

Lepidoptera outbreaks which documented in Panama and Costa Rica.

The declination in habitat specialist and disturbance sensitive bird species and in large frugivorous mammals and observed in Amazonian burned forest.

Temporary extirpation of more than 100 lowland butterfly species occurred at a burned forest site in Borneo.

75 to 99% losses of the live coral were registered during 1997 -1998 in the world.

The fisheries crisis would be there because of mass killing of the fishes due to raising the temperature of the ocean surface.

The strong climate force driving Ecological changes all around the world and particularly in tropical forest and coral reefs.

Health Impact.

The El Nino cycle which change the weather conditions and change the incidence of epidemic diseases. For example, the El Nino cycle is associated with the increased risks of some of diseases transmitted by mosquitoes which would be malaria, dengue fever and rift valley fever.

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Cycles of malaria in India, Venezuela, Brazil and Colombia have now been linked to El Nino.

There is outbreak of mosquito transmitted disease, Australian Encephalitis after heavy rainfall and flooding which would be associated with El Nino Event.

The Rift valley fever occurred after extreme rainfall in north eastern Kenya and south Somalia (1997 -98).

ENSO condition which would be related to Kawasaki Disease incidence in Japan and west coast of the United States.

Which sectors India should focus because of El Nino effect.

India should worry about the following sectors which are.

- 1) Ares without irrigation and totally depend on the monsoon
- 2) Western India region – mainly oilseeds, pulses and cotton.
- 3) Depend on the import of the oilseed and pulses.

India needs not to worry about the following sectors which are...

- 4) Region depend on Ganga for irrigation.
- 5) Area with alternative irrigation solutions.
- 6) Wheat, price because FCI has more than sufficient stock.

El Nino's Impact would be experienced on the following belts of India.

- A) Rainfed Regions of the central, South, north west India.
- B) Maharashtra, Gujarat, Rajasthan, Karnataka, Jharkhand and Bihar.
- C) Rice, soyabean, cotton, maize, jowar, groundnut and sugarcane.
- D) Kharif pulses and oilseed

How does El Nino hurt Indian GDP?

El Nino hurts Indian GDP because of the low rainfall and other reasons, these main reasons are-

- A) Poor rainfall / drought like condition.
- B) Inflation raises to 10%
- C) In order to combat with inflation, RBI must increase the REPO rate.
- D) Low GDP Growth.

Why does India need not worry about El Nino Affect?

- i) El Nino Affect was not that strong.
- ii) In 1997, Impact of El Nino, reported to be worst, india has 2% higher than normal rainfall.
- iii) In 2002 – 03 only year, india showed negative agri sector growth rainfall dropping 20% below normal
- iv) Central water commission reflect a better status of water availability.

Author Review

By this paper , we have understood that the El Nino effect is not stronger experienced especially on india. But the social , cultural , economic and environmental effect would be there so india has to aware about what kinds of precautions, india should have to take. But it's a record india doesn't has to face to heavy negative impact because of El Nino and heavy drought like condition.

Nevertheless , India has to focus on food security and food security is directly related with the social security.

For the food security, the following measures should be taken.

- a) Storage and ultra storage house for the food grains should be constructed.
- b) Production of the kharif crops should be raised
- c) Focus on water conservation and water storage capacity.
- d) Rain water harvesting method should be installed.
- e) Soil enrichment program should be enforced and take care of soil nutrients.
- f) The rodent and fly should be vanished before it would be destroyed the food grain.
- g) Promotion of the production of the cash crops and also APMC (Agriculture Production Market Commitees) for the supply and proper channelize of that food grains which would be helping out to fight against the food scarcity.

These above step should be taken care in order to nutralize the effect of the El Nino.

CONCLUSION:

El Nino impacts are very negligent on India, but India should have to take precautionary measures to flight or neutralize the effect of El Nino. India must focus on food security and water security. Hence India must work on water storage capacity and water harvesting method, maximization to conserve the rain water for agriculture and for livelihood. India has big coastal region hence India should have to focus on reduction of the salinity and make oceanic water appropriate for using for biological process and livelihood but at the same time India must focus on the food security, the certain cash crops, kharif crops must have to maximise their production and storage.

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