



## Increasing Land Salinity and Its Impact on Economy

### **Abstract:-**

*Generally nature provided us to oxygen, food, water and many other essential products for our survival or existence. Most of our resources came from to the nature. While we gave back pollution and wastage into the nature with rapidly speed during our selfish economic development process and activities. The nature has a potential to absorb and control the pollution but it has a limit while we hasn't it. So that such a pollution cycle run with rapidly speed in a nature and create lots of problems like, Global Warming, Greenhouse Effect, Acid rain, depletion of ozone layer etc. Increasing land salinity is also a one of the major worried problem among the above. Now we can't underestimate or ignored such a threat. Salinity is one of the most brutal environmental factors limiting the productivity of crop plants because most of the crop plants are sensitive to salinity caused by high concentrations of salts in the soil, and the area of land affected by it is increasing day by day. It creates huge impacts on various aspects of economy as well as on bio-diversity of land. A wide range of adaptations and mitigation strategies are required to cope with such impacts. Efficient resource management and crop/livestock improvement for evolving better breeds can help to overcome salinity stress. However, such strategies being long drawn and cost intensive, there is a need to develop simple and low cost biological methods for salinity stress management, which can be used on short term basis. In this paper we are trying to study the problem of increasing land salinity and its impact on economy as well as give some suggestion to how to combat with it.*

**Keywords:** - Land salinity, environmental degradation, economy impact, combat.

### **Introduction**

Generally nature provided us to oxygen, food, water and many other essential products for our survival or existence. Most of our resources came from to the nature. While we gave back pollution and wastage into the nature with rapidly speed during our selfish economic development process and activities. The nature has a potential to absorb and control the pollution but it has a limit while we hasn't it. So that such a pollution cycle run with rapidly speed in a nature and create lots of problems like, Global Warming, Greenhouse Effect, Acid rain, depletion of ozone layer etc. Increasing land salinity is also a one of the major worried problem among the above. Now we can't underestimate or ignored such a threat. Salinity is one of the most brutal environmental factors limiting the productivity of crop plants because most of the crop plants are sensitive to salinity caused by high concentrations of salts in the soil, and the area of land affected by it is increasing day by day. It creates huge impacts on various aspects of economy as well as on bio-diversity of land. A wide range of adaptations and mitigation strategies are required to cope with such impacts. Efficient resource management and crop/livestock improvement for evolving better breeds can help to overcome salinity stress. However, such strategies being long drawn and cost intensive, there is a need to develop simple and low cost biological methods for salinity stress management, which can be used on short term basis. A survey indicates that there were more and more salinity was increased and affected the huge land area. Like, in India 260 lacks hectares area affected out of total South Asia's 420

lack hectares. In Further 10% in India, 23% in Pakistan and 7% in Srilankan irrigational land area were converted into the saline affected area. (Global Assessment Institute, 2004).

### **Importance of the study**

This paper will help us in understanding the problem of increasing land salinity, its reasons and its impact on economy as well as on bio-diversity. This study will also help us in understanding some valuable suggestions regarding to how to combat with such a problem.

### **What is land salinity?**

In a simple language the proportion of a salt ( $\text{NaCl}_2$ ) is increased into the nature or original compound of the fertile land is called as "Land salinity".(Adyakar, 1963). It was happened by two ways. One of it is natural. Like, a sea water surface increased day by day of its geographical reason and it affected the rest of the fertile land area. While the other way is human efforts is irrigation. Farmers pulled out more and deeper saline land water for use of farming. That's why the fertile land will also convert into the salinity. Thus, the land salinity is rapidly increased and creates huge and various economic as well as bio-diversity effect in the nature. (Jalseva, 2007)

### **Objectives of the study**

- (1) To understand the land salinity problems.
- (2) To know the causes of increasing land salinity.
- (3) To know the impacts of increasing land salinity.
- (4) To suggest some solution regarding such a problem.

### **Collection of data**

Collection of data for this study were collect from secondary Information like, Article, thesis, research paper, magazine, newspaper and related Websites.

### **Reasons for Salinity**

The salinity is found both in soil and water. The soil salinity is increasing rapidly mainly due to increasing number of salt pans in the area and also higher use of pesticides in agriculture. The reasons for increase in salinity identified by the people include natural as well as human induced factors. Majority of the scientist believed that human induced reasons have dominated the natural reasons.

The major reasons for increasing salinity ingress are as under.

1. Increase in ground water draft for irrigation.
2. Droughts and change in rainfall pattern.
3. Excavation of sand from river bed.
4. Saline winds due to increase in salt pan area.
5. Due to pulled out more and deeper lime stone for mining activity.
6. Change in geological formation after the earthquake.

The salinity ingress in majority area have occurred due to more than one reason, however the main reason is over use of ground water by farmers as well as by industries. The second reason for increasing salinity is reduction of flow in the river caused by construction of dams on the river. This has pushed sea water inside the river bed up to 5 to 6 kms. which has polluted ground water in areas away from the coastline.

(Sudarshanam, 1999),

## **Impacts of increasing land salinity on economy as well as on bio-diversity.**

The salinity problem impacts the life and livelihood of such a coastal community. While on one hand their expenditure on availing basic needs like drinking and health are increasing at the same time the income from their primary occupation is decreasing. The detail socio-economic is shown as under.

### **(1) Impacts on coastal community and farmers**

- Reduction in their income due to low fertility and productivity.
- increased their expenditure on acquiring drinking water and good Health.
- Diversity in income source becomes essential
- increasing unemployment among youth.

### **(2) Occupational Effects**

- Reduction in employment in farm and livestock sectors.
- Reduction in no. of farmers and animal rears.
- Increase in immigration for getting better occupations.
- The farmers work as contractor in various occupations.

### **(3) Effects on land and water**

- Use of saline water turn into soil saline.
- Reduction in productivity of land.
- Land becomes hard creating difficulty in tilling.
- The crop demand higher amount of seeds and fertilizers.
- Once lands irrigated with saline water, even grass does not grow on this land.
- Drinking water converted into saline below 100 feet. No potable water.
- Drinking water Source became saline.
- Emergence of drinking water market.
- Increase in water borne diseases like, kidney stone, fluorosis and skin.
- Dependency on tanker supply increased.

### **(4) Effects on Agriculture, Livestock and Fisheries**

- Cultivation of ground nut became less and other change came in crop pattern.
- Reduced production.
- Reduction in quality product.
- Reduction in No. of milk animals.
- Increased health problems among the cattle and reduced their milk production.
- Reduced fisheries catch near shore due to industrial pollution.
- Increase in dependency of small fishermen on the boat owners for fishing.
- Reduction in availability of milk in nearby shore areas.

### **(5) Effects on Health**

- Increased the diseases like, kidney stone, fluorosis and skin.
- Reduction in immune capacity.
- Increase in No. of cases of miscarriage during pregnancy.

## (6) Infrastructure effect

- Reduction in quality of infrastructure and RCC constructions.

(Saudi journal of bio science, 2015),

(CSPC Report, 2007-08),

(<http://www.gec.gov.in>),

(<http://www.cspc.org.in>)

### Suggestions regarding reduced the increasing land salinity problem

1. To controlled the pulled out mining activity of lime stone.
2. To increase use of gypsum instead of lime stone.
3. To build up "Bandhara" (Or the Dams, Check Dams) at nearby sea shore areas. Which Prevents increase salinity.
4. To grow of salt tolerant crop seeds like mangroves and Gorad plantation in nearby Affected area.
5. To adopt less water intensive cropping.
6. To increase more and more rain water harvesting- well recharge for increased fresh water level in deeper ground level.
7. To increase awareness among community about water conservation and mining activity.
8. To promote of organic farming and drip irrigation system.
9. To reduce the use of salty water for irrigation.
10. To deepening the level of existing ponds and also built up new ponds which can help into recharge process of the fresh ground water level.
11. To stop the mixed of polluted water and other wastage of industries into the sea shore area.
12. To implement of Reforms and research regarding it as soon as possible.

(Sudarshanam, 1999),

(Soil survey Report, 2004).

## Conclusion

Most of our resources came from to the nature. While we gave back pollution and wastage into the nature with rapidly speed during our selfish economic development process and activities. The nature has a potential to absorb and control the pollution but it has a limit while we hasn't it. So that such a pollution cycle run with rapidly speed in a nature and create lots of problems like, Global Warming, Greenhouse Effect, Acid rain, depletion of ozone layer etc. Increasing land salinity is also a one of the major worried problem among the above. Now we can't underestimate or ignored such a threat. Salinity is one of the most brutal environmental factors limiting the productivity of crop plants and patterns. It also creates many other socio-economic and bio-diversity problem in such an affected areas.

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