

Climate Resilient in-House Plant for Human Health

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Resilience: -

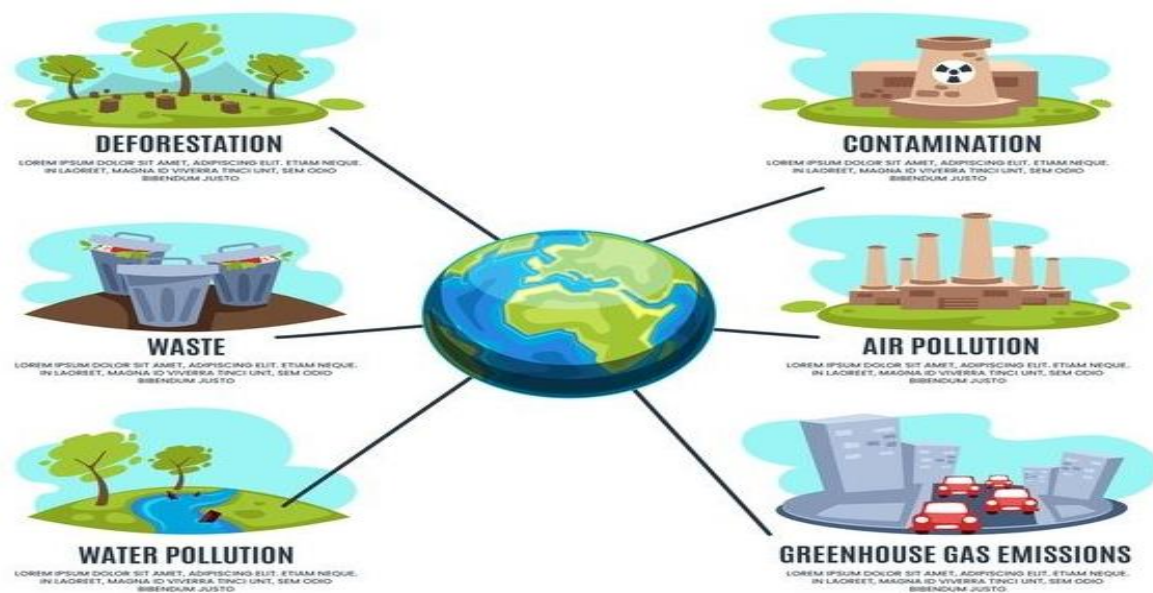
Resilience is the ability to withstand adversity and bounce back for difficult events.

Climate Resilience: -

Climate Resilience it is the ability to anticipate prepare for and respond to hazardous event trend or disturbance reliant to climate

Climate Resilient Horticulture (Floriculture): -

It is the use of climate smart Technology for cropping in the in appropriate climate to counteract the problem for human health



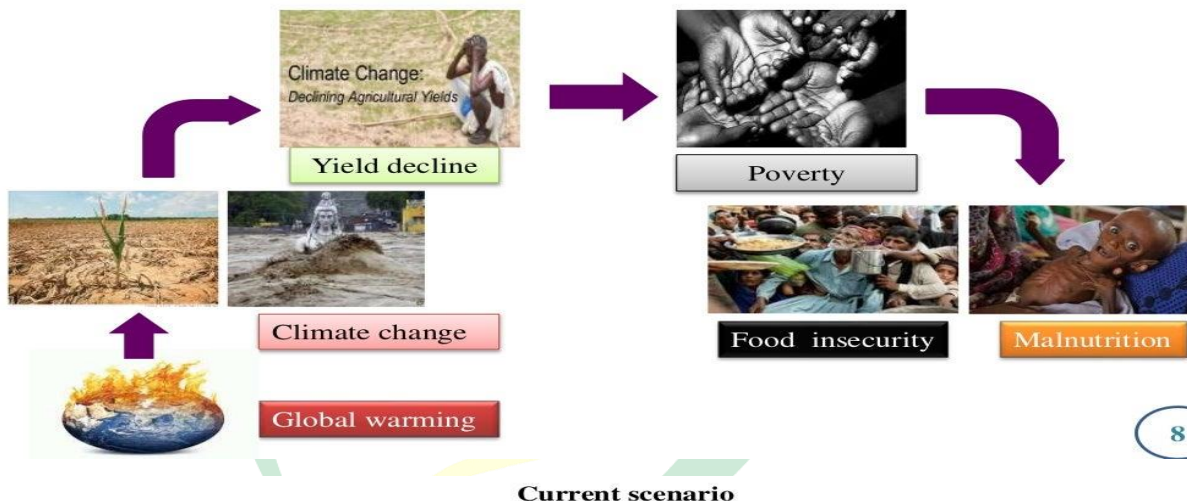
Source of climate change

The impact of climate change on flowering plants and crops will be more pronounced. Melting of ice cap in the Himalayan regions will reduce chilling required for the flowering of many of the ornamental plants like Rhododendron, Orchid, Tulip, Alstromerea, Magnolia,

Impatiens, Narcissus etc. Some of them will fail to bloom or flower with less abundance while others will be threatened. Plains of India will also have similar kind of problems and will be affected either by drought or excessive rains, floods and seasonal variations. Commercial production of flowers particularly grown under open field conditions will be severely affected leading to poor flowering, improper floral development and colour besides reduction in flower size and short blooming period Indigenous species in the natural habitat will be under threat for not getting favorable agro-climatic conditions for their proliferation. (Gupta. *et al* 2017)

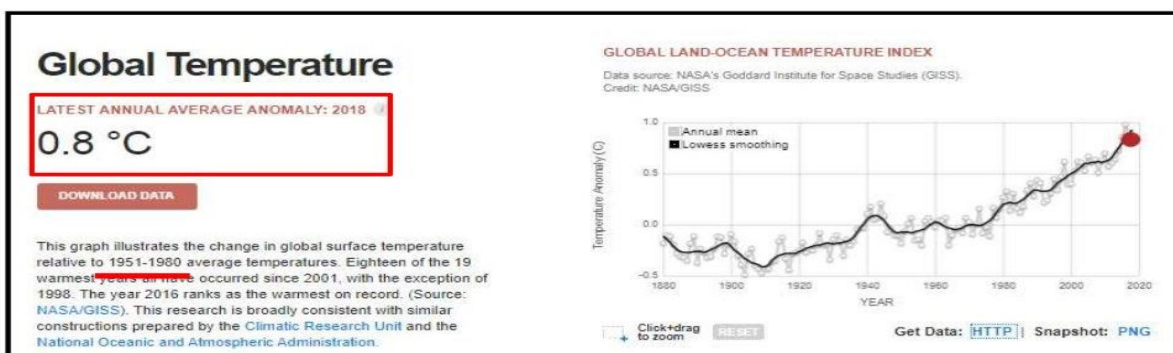
Climate change-

The definition provided by UNFCCC ‘a change that is attributed directly or indirectly to human activity which alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods’.



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Changes in the 21st century: Global mean temperature



2016-Warmest year on record (Source-NASA)


- Global mean surface temperature will rise between **1.8°C to 4.0°C** by 2100 (IPCC, 2014)




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The World Health Organization

Estimated that 7 million people die from air pollution every year. we think that the four walls of our home protect us from the pollution we are surrounded with outside. Indoor air has actually been shown to hold harsh pollutants too. Luckily for us, however, research has indicated that certain house plants act as a natural filter to indoor pollution. In fact, NASA-conducted research into the power of plants indoors found that there are over 50 houseplant types that remove pollutants and gases

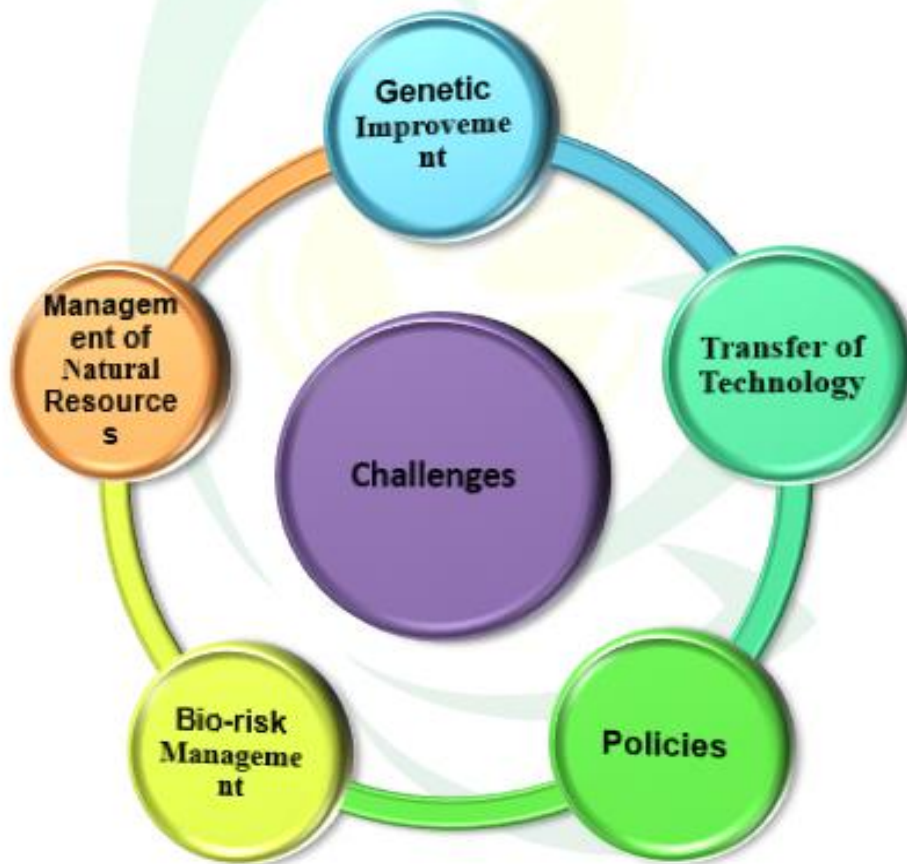
Below is a compiled list of the top plants that can improve the air quality in your home:

1. Areca palms	2. Philodendron	3. Rubber plants
<p>Areca palms filter out harsh chemicals including acetone, xylene and toluene, which accumulate from products such as nail varnish, detergents, wooden furniture, poor ventilation, gasoline, cosmetics etc.</p>	<p>The philodendron plant purifies air by removing formaldehyde, which tends to occur from building materials and home furnishings.</p>	<p>Rubber plants improve indoor air as their large surface leaves act as a sponge and absorb harsh chemicals then break them down. The plant has shown to absorb carbon dioxide and convert it into breathable oxygen.</p>
		

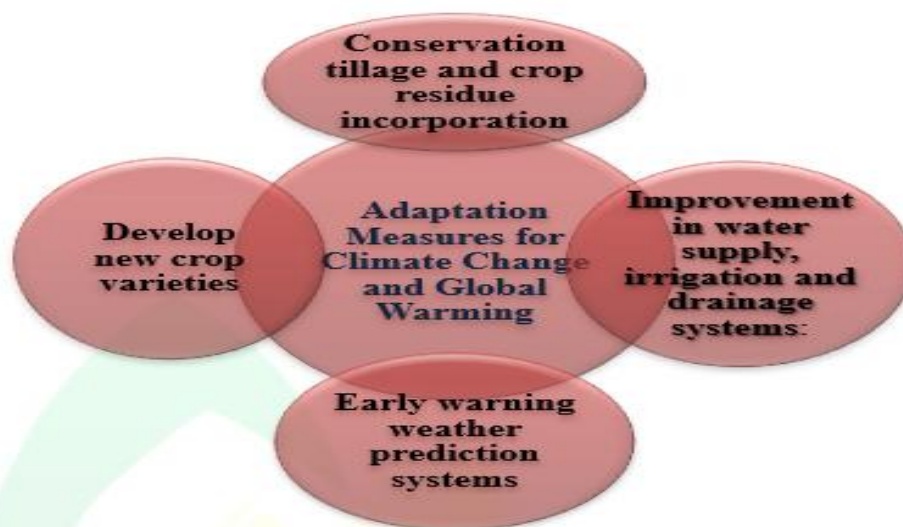
4. Peace lilies	5. Dracaena	6. The Snake Plant
<p>Peace lilies have shown to improve indoor air quality by up to 60%. The plant can be useful in areas of high humidity – like bathrooms for example, as it will keep the mold at bay.</p>	<p>Dracaena plants have shown to be one of the most effective air filters. The plant removes formaldehyde, benzene, trichloroethylene and carbon dioxide – all of which are linked to health problems. .</p>	<p>The Snake Plant is extremely effective in its ability to absorb harsh chemicals like carbon monoxide, benzene, formaldehyde. The plant also produces oxygen, absorbs CO2 in the night and has proven to be beneficial for airborne allergies.</p>
		
7. Boston fern	8. Aloe Vera	9. The Spider Plant
<p>Boston fern Alongside being a natural air filter, the Boston Fern also restores natural moisture to the air.</p>	<p>Aloe Vera plant acts as a natural air purifier and reduces toxic chemicals including formaldehyde and benzene – two chemicals that are present in cleaning products.</p>	<p>The Spider Plant is an antioxidant as it effectively removes ammonia, benzene, formaldehyde and xylene – harsh chemicals. A study found that within just two days, the plant removed up to 90% of the toxins found in indoor air.</p>



Challenges for climate resilient



Adaptation Measures for Climate Change and Global Warming



Future Strategies

Developing strategies and tools to comprehensively understand the impact of climate change and evolve possible adaptation measures for horticultural crops is less understood. To enhance our preparedness for climate change and to formulate a sound action plan, we need to identify gaps in vital information, prioritize research issues from point of view of farmers, policy-planners, scientists, trade and industry. It is imperative to deliberate upon the likely changes which can happen in next 50-100 years, how these changes could affect growth, development and quality of horticultural crops, what are the technologies which shall help to mitigate the problem and what kind of innovative research should be done to overcome the challenges of climate change.

Policies

National Action Plan on Climate Change (NAPCC)

Eight National Missions on Climate Change:

- National Solar Mission
- National Mission for Enhanced Energy Efficiency
- National Mission on Sustainable Habitat
- National Water Mission
- National Mission for Sustaining the Himalayan Ecosystem
- National Mission for Green India
- National Mission for Sustainable Agriculture
- National Mission on Strategic Knowledge on Climate Change

[NAPCC 2008]

Projected Change in Future Climate

1. Mean Kharif Rainfall to increase
2. More Frequent Heavy Precipitation Events
3. Snow Cover to Contract
4. Hot Extremes, Heat Waves to be more Common
5. Temperature Rise; 1 deg. C (2020) to 3 deg. C (2100); Less increase in Kharif than Rabi
6. Rise in Sea Level

[IPCC, 2007]

Archives of National conference on floriculture and climate change Gangtok, February 16, 2018, Inaugurated the three-day national conference on 'Floriculture for Rural and Urban Prosperity in the Scenario of Climate Change'.



National Conference

National Conference on Climate Change and Indian Agriculture, 12-15 October 2007, NASC complex, DP Shastri Marg, New Delhi: This was first conference of its kind to consider the issues of Indian agriculture in relation to impending climatic variability particularly global warming affecting crop production. Global Climate Change and Indian Horticulture: Current Status and Future Priorities, National Workshop, 6-7 September 2008, Central Potato Research Institute, Shimla: Indian horticulture nurtures a wide variety of fruit, plantation, vegetables, ornamental, medicinal and aromatic crops.

Conclusion

Climate change and their resilient is emerging as one of the main challenges that mankind will have to face for many years to come. Abnormal changes in air temperature and rainfall and the increasing frequency and intensity of drought and floods have long-term implications for viability and productivity of world agro-ecosystems. It is important at this stage to visualize the likely consequence of climate change on agriculture and allied sectors and initiate research programmed that may help in sustaining agriculture and food security even under the extreme climate change stress.

Reference

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