

## THE JOURNEY OF EUROPE TOWARDS SUSTAINABLE DEVELOPMENT AND MOVING TOWARD A NATURE BASED SOLUTION FOR TACKLING CLIMATE CHANGE

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### ABSTRACT

Climate change has emerged as the biggest threat to the modern civilization which has an impact on the ecosystem , economic and global well being of all its people , each other is affected by different factors depending on its geo-climatic conditions. EU has been tackling the climate issue through different techniques : Nature based solution is one of the project taken by the European Union which has provided massive success in Europe , followed by Urban living lab and sharing of economies , Countries have adopted the construction of green roofs and passive houses and moving towards a cleaner energy . Europe is promoting infrastructure for cycles and moving towards a carbon-neutral world with the aim to reduce carbon emission by 40 % by 2030 . Europe has taken the climate change as a serious problem and which involves the engagement of not only politicians and Industries but also states , local authorities , companies , cities and individual citizens to tackle this issue of Climate change to make life better for the future generation. The continent has been successful in achieving Sustainable Development Goals to a large extent and has set an example for other countries to achieve the SDGs which can help to tackle climate change , environmental problems, lost biodiversity , forest fires , sea level rise and eliminate food security and water crisis across the world .

**Keywords** : Climate Change, European Union ,Nature based solutions, sharing of economies , Urban living Lab , SDGs

### INTRODUCTION

Climate change is already a reality affecting the ecosystem , economy and well being of people and quality of life , global average temperature which is rising causing extreme heat waves , floods and drought ,these extreme weather events are becoming more severe .Climate records are broken year after years which has an impact on nature , plants and animals adopting to change and weather patterns , non-local species are coming some bringing new diseases and

causing diseases and affecting crops , Different regions will be impacted in different ways depending upon their geographical location .Climate change is also impacting in the global economy , changes can be felt in the food production , trade and access to key resources like water and fertile land which can increase geopolitical risks also for Europe , no matter where we are living we all are vulnerable to the affects of climate change . The impact of climate change depend on how effective our efforts are today and tomorrow in tackling the climate change , we need to reduce the amount of greenhouses gases and at the same prepare of a changing climate , sharing knowledge between different countries become necessary to tackle climate change , as it will help to better understand how each region will be affected and accordingly we need to come up with better preparation strategies and better face the challenges to come , in facing the climate change , inaction is simply not an option , we must develop a climate resilient society , resilient infrastructure , low carbon technologies and disaster preparedness and adoption measures , for instance use nature based solutions to tackle climate change as practised in many parts of Europe today , which helps in improving our quality of life and environment and future well being depends on what we do now . In Europe the main challenges of the 21<sup>st</sup> century is not migration , but the issue of Climate change , ageing population and digital revolution. In Europe many countries have been successful in reaching the Sustainable Development Goals , ending food security issues in which the European Union plays a significant role . Europe has experienced its worst climate change in the year 2018 , which extreme heat in summer and spring and extreme cold during winters , this climate change has badly affected the agriculture sector , however the food security is not yet at a risk . Farmers income has been affected and the export business outside Europe has contributed to the down in the agriculture sector . Europe has been concerned about the SDGs as it is about the future of humanity and the future of the world community , it is necessary to transform so that the people , the environment and the climate is fit for the coming generation . It is important that we all engage at all levels from the governments to tackle the issues for better future . There are 17 goals and the Europe has been successful in achieving a few , which also includes adopting to carbon neutral world .

### OBJECTIVE OF RESEARCH

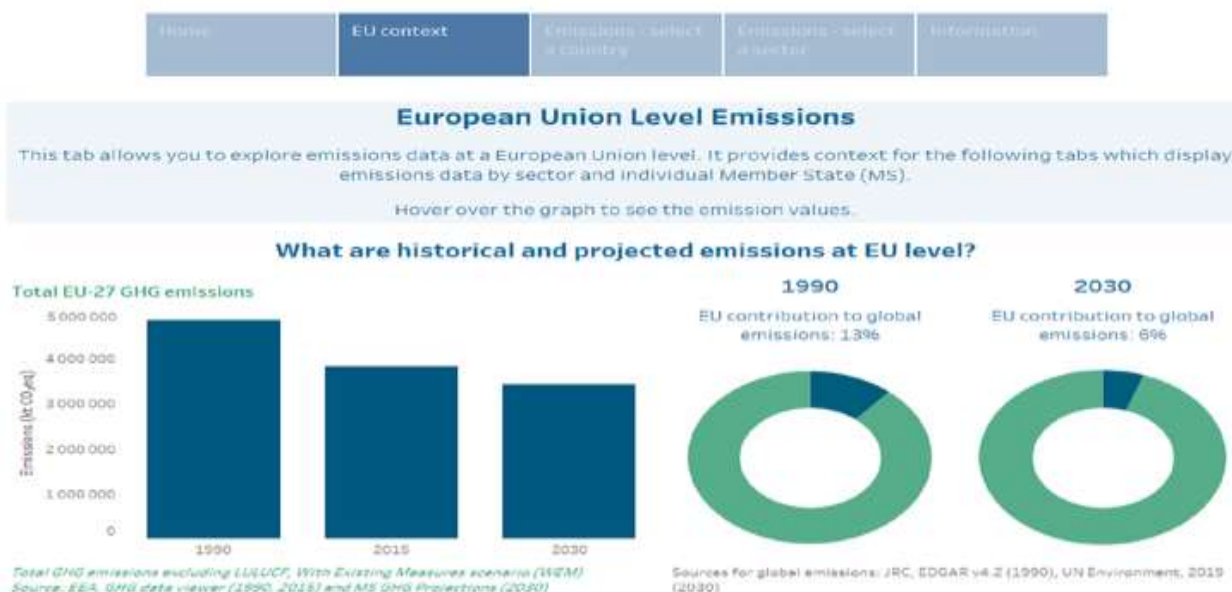
In this Research paper the main area of studies include

- 1.Climate Change in the world.
2. How climate change has affected the ecosystem , economy and well being of the people.
3. How Europe is dealing with Climate Change.
4. How much successful has been Europe in achieving the Sustainable Development Goal .
5. What initiative and new projects have been adopted by the European Union to deal with Climate Change.

### LITERATURE REVIEW

Fighting climate change has become the greatest responsibility of our times , and this why Europe has set the objective to become the first Carbon-neutral continent by 2050, this means leading an entire continent towards transitioning to clean energy reinventing our infrastructure , European union has a good record of turning ambitions into success which we can see with their adoption measures to tackle climate change in the next half of the paper , European Union is a political and Economic Union with 27 countries and a total population of 450 million people , on the ashes of war , Europe has secured lasting peace , from a divided continent , Europe has created a union without borders .The European Green Deal which an initiative taken by Europe which is both the vision for a climate neutral continent and map to

the goal , it is 50 actions for 2050 ranging from the first ever European climate law to circular economy to a biodiversity strategies to planting trees , protecting nature and animals , recycling and waste management and may more , Even when the COVID-19 , the economic and social crisis created by the pandemic , Europe decided to continue its transition towards a cleaner and healthier Future , they have also created an additional accelerator to mobilize and to move ahead , the large international support to Paris Agreement science with robust data and more data every year , the evidence of climate shifting all around us Glaciers melting , forest fires , more extreme weather events , Europe saw the prospect of many new jobs created by the transition . Avery important success about European is that all the citizens consider climate change to be a very serious problem , the youth is demanding a good quality of future . In September 2020 , the European Government announced that they would go one step further , moved to 40% reduction in greenhouse gas emission by 2030 and 55% reduction by 2030 .Solving Climate Change will help solve a host of other problems , there is a link between loss of biodiversity and zoonotic viruses like the Corona viruses , majority of the politicians , workers are concerned how to continue working with the transition with pandemic under restriction , however according to EU we have the knowledge and the technology , and now we have resources to accompany this change and make this transition just , working on climate goals and climate change and investing more than 600 billion euros .Apart from Politicians and continent we require the involvement of state , NGOs , companies ,cities ,citizens and every individual in addressing the climate change issues and move towards the same direction and to sustain their action over the long term . The European Union is ready to cooperate wit anyone who is ready to engage themselves in this journey , Fixing climate change calls for everyone’s action every day .



### FINDINGS

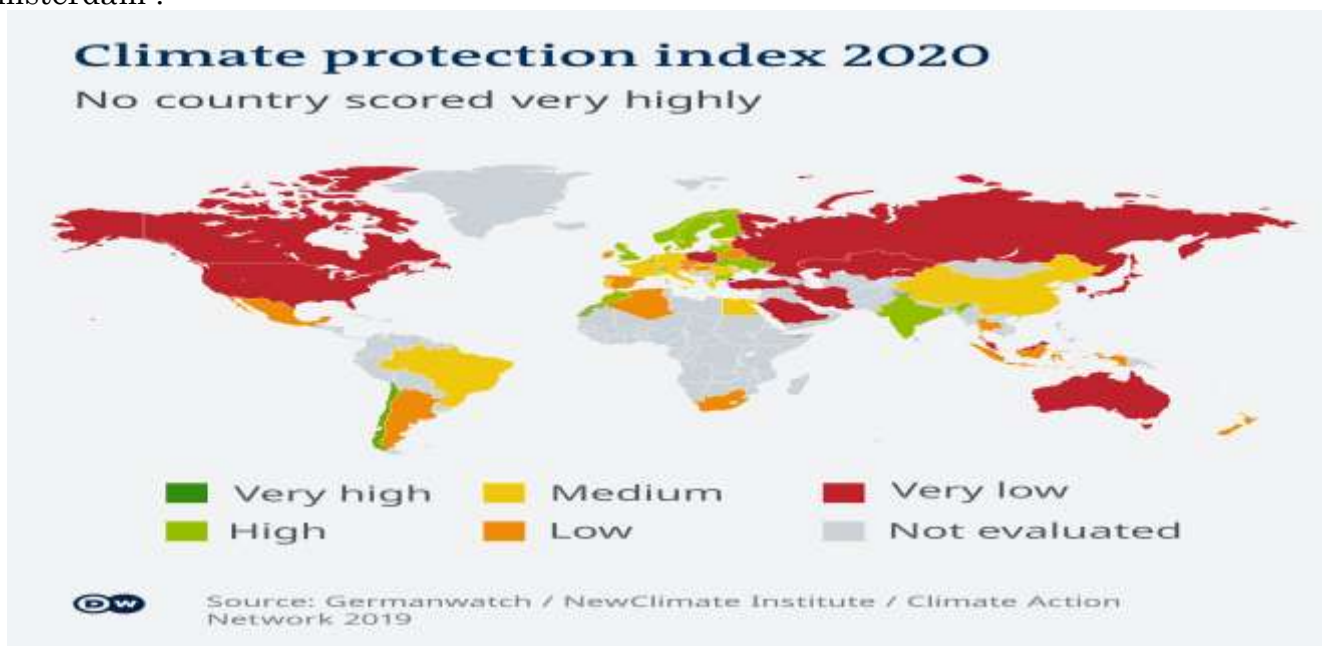
All over Europe climate change is a growing concern , climate change can’t be neglected it is having an effect on oceans , land surfaces , ice caps and weather patterns across the globe , it is understood that climate change is caused by atmospheric gases such as carbon dioxide and methane , when we look at these gases , it is clear that there is a correlation between human activity and climate change . The concentration of carbon dioxide has increased over the past 100 years caused by Human beings . The scientist and the government requires data to understand how our planet is changing . With 4 EU Copernicus Sentinel Missions and 4 Earth

explorer missions in orbit ice thickness , deforestation and soil moisture sea level , ocean temperature and as well as other essential climate variables can be measured , these satellite have global coverage and revisiting the same region every few days , therefore providing a good understanding of the health of the planet and how it is affected by climate change and in turn this offers decision makers key information for mitigating strategies and policies .

Europe has adopted Nature based solutions to tackle climate change and hope that this will help them to meet the challenges , nature based solutions have the potential to tackle issues like managing floods , improving health outcomes , for instance construction of green roofs in city parks to reduce the heat stress , we also have today city lagoons to store water and rain gardens to save water and permeable surfaces and vegetation , Grey Infrastructure and advance in technology are key drivers to improve energy efficiency in the built environment and design of waste water systems in the urban development . The Naturvation project has been funded by the European Commission , it involves 14 institutions working in different sector such as urban development , innovative studies , geography , ecology m environmental assessment and economies , the project involves city governments , NGOs and Business , , Naturvation project will help to develop the evidence base and tools , trying to understand the environmental ,economic and social benefits nature-based solution can bring , which can contribute o making our cities more sustainable for the future and address the most important sustainability challenge and benefit those places and communities who need them the most .Nature based solutions have become very popular means for tackling urban sustainability , the ideas that we can use nature to work with us in order to improve our cities is seen as vital. The idea that nature is able to provide services and values that contribute to wider goals for economic , social and environmental sustainability . The term nature based solutions has been coined by the European Union and is an umbrella term for a number of different approaches that use nature to improve urban sustainability like green infrastructure , green space , restoring rivers , ecosystem services and ecosystem based adaptation . The solutions which are cost effective , simultaneously provide environmental , social and economic benefits and help build resilience , such solutions bring more and more diverse nature and natural features and processes into cities , landscapes and seascapes through locally adapted resources efficient and systemic interventions .The Naturvation Project was funded by the Horizon 2020 sustainable cities and communities program at the European Union is developing our understanding about how nature based solutions are currently being used . Nature-based solutions has been implemented in 100 cities in Europe , the work shows it is clear that nature-based solutions are an increasingly popular means of tackling many urban sustainability challenges .



Urban living labs has emerged across Europe has a response to tackle environmental issues , it is spreading rapidly in Europe as a main through which public and private actors are testing innovations in buildings , transport and energy systems , The project brings together leading European partners to create a framework for evaluating the design , practices and processes of urban living labs to enable the comparative analysis of their potential and limits . An urban living lab is a local experiments to test new combinations of technologies , but also new social activities in combination with technologies . Urban living labs is the way in which these deliberate interventions in cities are being used a vehicle to try to address the sustainability challenges , urban living lab is a new type of experimental intervention that have the potential to renew and revitalize urban governance for cities , these labs are now being thought of as a way by which we can improve the urban environment for people . GUST project hopes to achieve a better understanding on the role of urban living labs . The house called or sustainability was designed to test the technology of using smart metering in the housing sector , designs for building that were energy-efficient were first tried out in Milton Keynes . It is also undertaking a small grid demonstration project and other trials of different ways of using smart technology .Malmö in Sweden has a fantastic strategy called no ridiculous car journeys , where the local authority has a lot of ability to help people adopt a certain type of behaviour and display how easier it is to cycle in the city ,in Scandinavia especially in cities like Malmö , Lund and Copenhagen have excellent cycling infrastructure , with good accessible city lanes , good air pumps , good safe places to park your bike or to for your bike .On the other hand cities like Stockholm and London have adopted congestion charges to limit car driving in the centers of city , there is limit of driving and an increase in air quality . Cities like Basel actually require green roofs on all new building , Bracelona they are trying to increase solar panels by regulating them on new buildings , cities more and more work with partnership Rotterdam Climate Initiative which involves local authority , several business , large scale businesses in the Rotterdam Port and also some national authorities . They are address climate change both mitigation and adaptation across the city , on a smaller scale cities are also working with citizens for example in urban agriculture policies , this has been done in cities like Malmö and Amsterdam .



Sharing cities Sweden is national program for sharing economies in cities , this program aims to put Sweden on a map as a country that actively and critically works with sharing cities , the

sharing economy can contribute to social environmental and economic sustainability ,, sharing economy is all about making interconnections between the sharing economy and urban development local communities and ICT and digital Platform , this program is carried out within viable cities a strategic innovative program for smart and sustainable cities . Sharing economy through test beds have been developed in Stockholm , Gothenburg , Malmo and Lumia . Sharing services and digital platform will be developed and the opportunities and risks of the sharing economy will be conducted in collaboration with business , the public sector , civil society and academia and the sharing services that will be developed in the test beds will related to the utilization of spaces like housing , green infrastructure , shared public space and the utilization of goods and services like tools clothing and toys and the program will also include transport and mobility . Gothenburg in Sweden has been recognized for its innovative climate strategies , the introduction of green bonds and decrease in carbon emission, and has invested in electric cars , biogas production and water purification filter .

Food and nutrition security and sustainable agriculture are a key focus of EU support ,results show that the EU supported around 26 million food insecure people who received longer term assistance through social transfers or livelihood support which has helped in cutting down poverty and food crisis in Europe .

### CONCLUSION

The Earth is in crisis, the frequency of natural disasters has increased , the world is following apart and the future as well as all that we have achieved in the past . The homes are getting hotter because greenhouses gases are trapping heat in our atmosphere , According to Scientist if global temperatures rise by more than 2 degree Celsius we will face food and water shortage , extreme weather and an almost 50 cm rise in sea levels by 2050 , we could also lose up to 10.5% of the species on earth , so far EU has cut its greenhouse gas emission to 22% below 1990 levels and is committed to reducing them at least 40% by 2030 .it isn't just carbon we are pumping into the skies .Air pollution gases like Nox from cars kill up to 400,000 people in the EU each year to tackle transport pollution , new EU rules have improved the fuel quality and promoted cleaner engines , if EU air quality is improved it could prevent thousands of premature deaths every year from cardiovascular and respiratory diseases , meanwhile 2.5 billion tonnes of waste is generated in the EU each year , much of that ends up in the oceans , 70% of that marine litter is single use plastic like carrier bags every year we use 100 billion plastics bags , each is used for 20 minutes on average but takes 400 years to degrade , by 2021 in EU will end single use plastics like plates, cutlery , straws and cotton buds will vanish from shops . Europe has been very serious about the climate change and are taking steps to save the future and make the life of the future generation better . Europe as an example for other countries to tackle climate change and work towards sustainable development goals .

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