

## **Milica Milosev Team 54 Project SDG 13 Space for Youth (SpaceClime)**

### **Abstract**

The complexity that climate change brings and its impact on critical areas such as agriculture, water and land management, disaster recovery, energy, health, education, peace and prosperity, security and economy is well documented. Future solutions will require advanced technological approaches, which space-based technology provides.

Space-based technology can contribute to SDG 13 through the creation of a space-based application called SpaceClime. With this advanced technology we will be able to create platforms that can integrate with operating systems from the orbiting satellites, which can assist in building a better Advance Climate Early Warning System. This System can be incorporated into the existing digital communication platforms to help strengthening our adaptation approach and disaster reduction risk protocol whenever environmental events occur. With the support of relevant stakeholders in developed nations, the SpaceClime app can be the gateway for developing nations to have access to shared beneficial satellite data.

SpaceClime is our idea for a space-based technological application that integrates geospatial information from satellite into land based digital communication that can assist in effective communication during and after ecological events.

### **Introduction**

The climate crisis is a global problem with great environmental consequences on humanity and our planet. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow. Weather patterns are changing, sea levels are rising, weather events are becoming more extreme and greenhouse gas emissions are now at their highest levels in history (UN OOSA, 2018). Unfortunately, we are still struggling to address climate crisis. By adopting The 2030 Agenda for Sustainable Development as ratified by all UN Member States with inclusion of space-based technologies we can universally address the climate issues and now reenforce acting on all SDGs.

With the complexity that climate change brings in critical interconnected areas such as agriculture, water and land management, disaster recovery, energy, health, education, peace and prosperity, security and economy, future solutions will require advanced technological approach, which space-based technology provides.

### **How can space contribute to the SDGs in general?**

Space-based technologies such as Earth Observation satellite, meteorological and communication satellites can play a crucial role in SDGs, because of the need to preserve planetary resources to sustain human existence. Space-based technology can coordinate and assist to better understand the factors that affect the SDGs. will indeed ensure the success of SDGs their ability to collect and process informations that are important for achieving sustainable development goals.

Furthermore, this advance technology collects and process planetary data which can then be analyzed to help improve disaster reduction risk management and enhance all forms of life on the Earth. Since the establishment of the SDGs in 2015, stakeholders have been sourcing for ways to improve, evaluate and monitor them, space-based technology can become a key tool.

In particular, how has space contributed to one SDG of your choice?

One way space-based technology can contribute to SDG of my choice (SDG 13) is trough the creation of space-based application called SpaceClime. With this advanced technology we will be able to create platforms that can integrate with operating systems from the orbiting satellites, which can then assist in building a better Advance Climate Early Warning System that can further be incorporated into the existing digital communication platforms (telephones, mobile phones, mobile applications, internet platforms, etc.) to help strengthen our adaptation approach and disaster reduction risk protocol whenever environmental events occur.

Space-derived and in-situ geographic information and geospatial data are extremely useful during times of emergency response and reconstruction, especially after the occurrence of major events such as earthquakes or floods (UN OOSA, 2013). In the case of large urban areas with a high population density, the use of these technologies can provide crucial information such as number of damaged buildings, affected populations and hazardous sites that can trigger secondary disasters. GIS are also utilized for urban planning, development and management of infrastructure and civil services. There is an urgent need to promote the applications of such technology by urban planners, engineers, and decision makers to innovate and improve resilience of the urban environment (UNISDR, 2013).

This collected data are real time non-intrusive, objective and analyzed information generated to monitor our planetary environment, which is important for decision making during and after ecological disaster.

Consequently, features from the data collected can be used to pinpoint the path or locations on land of likely devastation and extent of difficulty that can be encountered by humans and other life forms in the immediate post-disaster period.

With improved real-time predictions of weather and climate patterns better outcomes in the area of agriculture, health, security can be certain. Altogether it can better prepare any government for an appropriate response which can save lives. This concept is what our "SpaceClime" application hopes to implement, if functional, because it can help to developing a strong adaptation actions especially for vulnerable and developing nations.

With the support of relevant stakeholders in the industrialized nations who are likely to buy-in to space-based technology in addressing SDGs, SpaceClime app in addition can be the gateway for poor nations to have access to shared beneficial satellite data.

Space-based technologies can have essential role in monitoring and providing early-warning system for the communities that are vulnerable and at risk. Lack of early-warning system and alerts, that can be transmitted and transferred on-land, could increase the damage and casualties in the areas affected by the unusual weather patterns.

The recent environmental disaster from Cyclone Idai, is a good example of how the governments of Zimbabwe and Mozambique could have used the space-based technologies and early-warning system to avoid the senseless deaths that could have been prevented.

The data collected through space-based technology can be used not just to warn us about the unusual weather and climate patterns, but also to identify critical sectors on land at risk from severe temperature increase, flooding, drought, rising sea levels and help locate people needing urgent humanitarian aid.

How could these examples be built upon and expanded in the future?

One of the ways of likely expansion in the future is the development of SpaceClime, which is our idea for a space-based technological application that integrates geospatial information from satellite into land-based digital communication that can assist in effective communication during and after ecological events.

Furthermore, satellite broadband technology can be used to monitor climate refugees impacted by climate change and also help in the management of endangered wildlife species.

### Conclusion

In the 21st century, the digital era, we should use advanced technology as a tool and in our advantage to effectively address climate crisis and to build the foundation for sustainable development.

### Bibliography

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