HFS MUN

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STUDY GUIDE: UNDP (UNITED NATIONS DEVELOPMENT PROGRAMME)

HFSMUN 2022

INDEX

Letter from the EB

Dear Delegates,
Welcome to the United Nations Development Programme Committee (UNDP)!
Meet your executive board- We have two Directors and an Assistant Director. Saisriyaa Patro is a senior in high school at HFSI Mumbai, India. She has experienced over 50+ MUNs in various capacities: delegate, OC, core secretariat, and the EB. Tamanna Dharamsey recently graduated from St. Xavier's College Mumbai, and has experience in the fields of delegate, press, OC, logistics, and the EB for 45+ MUNs. Teesta Bhattacharya is a junior in high school at HFS and this is her first time as a member of the executive board. Over the years, she has participated in over 20 MUNs and also served on the logistics team. We are beyond excited to be serving as your chairs at Hiranandani Foundation School Model United Nations (HFSMUN) 2022!

Model United Nations, also known as Model UN or MUN, is an educational simulation and academic activity in which students can learn about diplomacy, international relations, and the United Nations. It is meant to engage students and allow them to develop a deeper understanding of current world issues.
MUN allows students to step into the shoes of world leaders to discuss and solve global problems. What we like best about Model United Nations is the opportunity it provides students to actively discuss major global issues that affect not only them but society as a whole.

We are thrilled to get to meet all of you in UNDP, and we cannot wait to hear you tackle some of the world's most important issues together. We look forward to having an incredibly fun time throughout the entire weekend, which will also be filled with lots of learning and productive solution-focused work. Having an offline MUN after the pandemic will be worth it!

Once again, we cannot wait to meet all of you during what will hopefully be one of the most memorable weekends of your lives for years to come! If you have any concerns or questions, please do not hesitate to reach out and contact the EB!

Regards,
The Executive Board, UNDP

About the Committee

The United Nations Development Programme was formed on November 22nd, 1965. UNDP works in over 170 countries and territories to eradicate poverty and reduce inequalities through sustainable development. It helps to achieve the eradication of poverty and the reduction of inequalities and exclusion. Through their development policies, leadership skills, partnership abilities, and institutional capabilities, they build resilience to sustain development results. They also strive to achieve sustainable economic growth and human development. Along with their offices in all 170 countries, they are headquartered in New York, USA. The UNDP is funded entirely by voluntary contributions from UN member states. Their current head is Achim Steiner but they are governed by a 36-member executive board overseen by an administrator, who is the third-highest ranking UN official after the Secretary-General and Deputy Secretary-General.

Agenda 1:
Toxic waste management with a specialisation in nuclear waste disposal.

To properly understand toxic waste management, you must understand the definition of the same. Hazardous waste is material that can cause substantial harm to human health and safety or the environment. Hazardous wastes can take the form of solids, liquids, sludges, or contained gases, and it is generated primarily by chemical production, manufacturing, and other industrial activities. They may cause damage during inadequate storage, transportation, treatment, or disposal operations. Improper hazardous waste storage or disposal frequently contaminates surface water and groundwater supplies as harmful water pollution and can also be a source of dangerous land pollution. Toxic waste management looks at hazardous waste collection, treatment, transport, disposal, characteristics, storage, and remedial action. Proper care and attention are required during storage, segregation, transportation, and disposal of hazardous waste because it cannot be disposed of in the environment.

Nuclear waste specifically is radioactive waste, which is a byproduct of nuclear reactors, research facilities, processing plants, and hospitals. It is also generated while dismantling/ decommissioning nuclear facilities.

Nuclear waste has 3 broad classifications: low-level, transuranic, and high-level radioactive waste. Each classification should be disposed of differently according to its risk to the environment and/or human health. The most common type of nuclear waste disposal is direct disposal; it is a management strategy where used nuclear fuel is designated as waste and disposed of in an underground repository without any recycling. The used fuel is placed in canisters which, in turn, are placed in tunnels and subsequently sealed with rocks and clay.

Diamond Battery- A case study for nuclear waste disposal solutions.

A team of physicists and chemists from the University of Bristol have created a man-made diamond with electric currents that last longer than the history of human civilization. The diamond battery is the name of a nuclear battery concept proposed by the University of Bristol Cabot Institute during their annual lecture held on November 25, 2016, at the Wills Memorial Building. This battery is proposed to run on the radioactivity of nuclear waste in the form of graphite blocks, which were previously used as neutron moderator material in graphite-moderated reactors and would generate small amounts of electricity for thousands of years.

Scientists largely agree that nuclear energy has significant advantages over fossil fuels but finding a way to dispose of nuclear waste has proven to be a big challenge. We have ways of storing it in the short term, but experts are puzzled over the best long-term storage solutions. The big problem is that nuclear fuel stays dangerously radioactive for thousands of years. Countries like Finland, Sweden, France, and the U.S. are currently disposing of high-level waste deep below the earth's surface.

Since the 1940s, the UK has run many nuclear reactors for research and military purposes, as well as for electricity generation. These reactors use uranium as fuel, housed inside of a core made of graphite blocks. This graphite core assists in the nuclear fission process, enabling a controllable chain reaction that provides a constant source of heat. This heat is then used to turn water into steam, which in turn drives turbines to produce electricity. Nuclear power plants, though, create nuclear waste, and therefore, when any reactor is shut down, the waste must be safely stored and contained. We then simply have to wait for it to stop being radioactive. However, this could take thousands to millions of years, making it a long-term safety commitment to maintain and monitor. Because of our use of graphite-moderated reactors, the UK has created almost 95,000 tonnes of radioactively contaminated graphite blocks. This graphite is just one form of carbon, a common and stable element, but having placed these blocks in a high radioactivity environment, some of the carbon is altered but the nuclear energy turns it into the radioactive, carbon-14. The carbon 14 will eventually turn back to normal carbon once its extra energy goes away, but this is a lengthy process as the radioactivity of carbon 14 drains after 11460 years.

A group of scientists from the University of Bristol's Institute has demonstrated that the eradicative carbon14 is concentrated on the outside surfaces of our graphite blocks. This means that it is possible to process them to remove a lot of this radioactivity. By heating them, much of the radioactive carbon is given off as a gas, which is then collected. The remaining graphite blocks are still radioactive, just less than they were. This means that we have less of a problem and less of a cost to deal with. The radioactive carbon 14 in gas form can then be converted at low pressures and selected temperatures to form a diamond, which is just another form of carbon. These small, man-made diamonds have a strange property in that they can generate an electric current when replaced within a radioactive field. Our diamonds, though, are made of radioactive carbon and can provide the energy to generate an electrical current. This gives us a nuclear-powered diamond battery. For this to be used safely, another non-radioactive diamond layer is formed around the radioactive diamond, completely absorbing all of the dangerous radiation and converting it into even more electricity, making it nearly 100% efficient. There are no moving parts, no emissions, and no maintenance, just direct electricity generation. Since diamond is the hardest substance known to man, no other material could easily offer more protection to the radioactive carbon 14.

On the outside, only a tiny amount of radiation can be detected, less than what a single banana emits, making it perfectly safe to handle. As mentioned, the radioactivity drains after 11460 years, meaning the diamond batteries have an incredible lifetime. This means that in 13,478 years the diamond batteries will begin to run out of fuel. These batteries would, therefore, be best used in situations where it is not feasible to charge or replace conventional batteries. This battery could be used in places like a satellite, a rocket, or even to build electricity boards. It would make things much more convenient and sustainable, and could later be applied to phone batteries, meaning chargers would be rendered moot as the battery would outlive the life of a phone. There are so many possible applications that the University of Bristol is asking the public to make their suggestions using the #diamondbattery. The development of this new technology solves a large portion of problems with nuclear waste, allowing us to enter the 'Diamond Age' of power generation.

Using this form of toxic waste as a means to generate long-lasting power is exactly the form of sustainable and innovative solutions the United Nations Development Programme strives for and encourages with its 17 SDGs. The diamond battery takes us one step closer to reaching our goals for 2030.

Agenda 2: Development of sustainable cities (with a deep dive into green smart cities) to combat the effects of urbanisation (Referencing mainly to the SDG #11)

'A sustainable city can be defined as one that can provide the basic needs of the population along with the necessary infrastructure of civic amenities, health, and medical care, housing, education, transportation, employment, good governance, etc. giving due importance to the environment, equity, and futurity.' The essential elements or characteristics of a sustainable city are urban renewable actions, reduction of CO2 emissions and other greenhouse gases, accessibility, functionality, efficiency, ethical consumption, and lastly the 3Rs.

Green engineering in smart cities appreciates both the citizen's lifestyle as well as the natural ecosystem. Recent advancements in green engineering for waste and electric cars will be big game-changers. Cities need smart solutions to ensure that they are optimised for sustainable economic activity, energy consumption, and positive environmental impacts.

Digital technologies help plant life thrive in the urban environment making it possible to make cities greener, safer, and more efficient by connecting devices, vehicles, and infrastructure everywhere. An example of this is smart grid prioritisation, which will help reduce carbon emissions from greenhouse gases. It’s a plan for the future with stepping stones to get there.

The definition of a smart city and its main expected features focus on technology innovation, smart governance, and main financing and support programs. An analysis of the most interesting initiatives at the international level pursued by cities investigating the three main areas of Green Buildings, Smart grid-Smart lighting, and Smart mobility is given, to offer a broad reference for the identification of the development of sustainable plans and programmes at the urban level within the current legislative framework.

We believe they are the future and are the sustainable ones that will allow us to continue living on earth. With an estimated 70% of the world's population predicted to live in cities by 2050, sustainable cities are key. Cities already consume 80% of global resources and energy supplies.

They also produce 75% of all carbon emissions. The combination of a large number of people with high infrastructure makes them more susceptible to disasters. Most cities worldwide are growing exponentially while the infrastructure is growing at a more linear rate, hence not being able to keep up with it. It is similar to the Malthusian theory, and at a certain point, we will be caught in the Malthusian trap.

Sustainability is the key: they will provide more competitiveness and be more attractive to people, with more investments and lesser poverty, a better quality of life, action on climate change, green economic development, higher resilience to natural disasters, social inclusion, and smarter technologies to take advantage of efficiency. All cities can't do it on their own. Businesses and firms play a huge role in it as they would have better funding and can research how to get the best solutions. To avoid chaos, collaboration has taken place. 10 cities and 14 companies from all over the world are working together to achieve this goal.

HISTORY: Agenda 1

Toxic waste management with a specialisation in nuclear waste disposal.

Arguably the earliest engagement of International Organisations (IOs) with waste management and disposal took place in the 1930s when the League of Nations Health Organisation addressed waste as part of its programme on healthy housing. Due to this, governments faced a limited range of options for how to dispose of waste: it could be fed to animals, dumped into water (sea, lake, or river), dumped on land (as an open landfill or buried), or burnt. By the early twentieth century, all these methods were practised in industrialised countries.

By the mid-1900s, waste management was considered a largely 'solved' problem, one which was no longer an issue, especially in developed countries. Part of such waste produced regularly was poisonous, but for a long time, no special provision was envisaged. The World Health Organisation (WHO) even named it a 'traditional' health risk, as opposed to 'modern' health risks, such as chemical pollution from intensive agriculture.

Hazardous waste first began gaining widespread public attention in industrialised countries in the 1970s. This was partly a result of several scandals involving former waste sites. Mishandling of industrial effluents and mining waste, oil spills, and radioactive mismanagement resulted in dire and unexplained diseases, tumours, skin ailments, miscarriages, paralysis, and death. The lack of knowledge on the topic as well as the woefully poor awareness of the common people meant a very poor standard of toxic waste management. Be it unknowingly or deliberately, these unregulated waste management methods soon became the root of a lot of scrutiny from the public eye.

Early on, several international organisations, notably the EEC, NATO, OECD, and WHO, began to address the issue in publications, surveys, reviews, and the collection of data. As they sparked international attention, these global initiatives began to bring into perspective several crucial questions regarding the definition, collection, storage, transportation, and disposal of hazardous waste. Their inquiries into the safe design, adoption, acceptance, and implementation of these methods were essential. It provided the impetus to pressure national authorities across the planet and galvanise them into action to mitigate a fast-growing problem that had been all but ignored so far. These programmes revealed the improvised nature of much of the policy-making at the time but also gave the valuable chance to consider hazardous waste management within larger development pathways.

Overall, several IOs have played pivotal roles in overriding international development efforts which formed the primary basis for increasing hazardous waste production. More directly, IOs have been involved in the interaction of hazardous waste both with domestic and international development.

Concern can be seen clearly expressed in a 1967 report by the WHO Scientific Group on the Treatment and Disposal of Wastes, which states:

"Industry has usually not considered the effect that the wastes from new products or new industrial processes may have on the water environment. Governments also rarely consider the possible long-term effects of such products and processes on the environment when industrial projects are conceived. Highly persistent detergents, pesticides, and other toxic wastes are becoming an ever-increasing problem in developed countries and in time will present a similar challenge to developing countries"

The perspectives taken during multilateral conversations at IOs oscillated between the pragmatic, straightforward collection of data with a superficial search for short-term management whilst trying to dispose of the substances and more principled viewpoints on how to find long-term solutions for hazardous waste through a new comprehensive approach that incorporates all the stages of production right from planning and management to disposal.

While keeping all its types in mind, the prime consideration of hazardous waste undertaken at IOs is usually focused on nuclear waste, with emphasis on that waste resulting from the medical and military uses of radioactive substances and most importantly from the rapidly rising number of nuclear power plants. Between 1967 and 1982, the European Nuclear Energy Agency of the OECD coordinated a cooperative project for the dumping of nuclear waste from several European countries into the Atlantic Ocean. This was the first step for many towards better toxic waste management.

Hence, IOs could not prevent the rising spread of toxic materials into the environment. But they may have alleviated its impact, and paved the way for alternative development planning in the long run.

HISTORY: Agenda 2

Development of sustainable cities (green smart cities) to combat the effects of urbanisation. (Referencing mainly to the SDG #11)

A sustainable city, eco-city, or green city is a city designed with consideration for social, economic, and environmental impact, and resilient habitat for existing populations, without compromising the ability of future generations to experience the same. Richard Register was the first person to coin the term 'Eco-city' in 1987 in his book 'Ecocity Berkeley: Building Cities for a Healthy Future.' It offers a variety of innovative city planning solutions that would work anywhere but also emphasises a vision of what the future can be like when a fair amount of planning is put in beforehand.

Other leading figures who had envisioned sustainable cities long in the past were architect Paul F Downton, as well as authors Timothy Beatley and Steffen Lehmann, who have written extensively on the subject.

The Earth Summit, or the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992, was groundbreaking in terms of setting a precedent for sustainable development.

Here, the historic Agenda 21 was first created. The programme portrays how multiple endeavours to counter environmental degradation, poverty and lack of democracy should be adopted in our societies to achieve sustainable development.

The Sustainable Development Summit (2015) saw the emergence of Agenda 2030, also known as the Sustainable Development Goals. It took all of the goals set by Agenda 21 and re-asserted them as the basis for sustainable development. Along with this, a total of 17 new goals were agreed on, revolving around the same concepts as Agenda 21: people, planet, prosperity, peace, and partnership.

The implementation of Agenda 21 on a global scale is being done on a grassroots level. Each nation participating was encouraged to come up with its own local Agenda 21 to address and combat climate problems in a decentralised manner.

Cities like Reykjavik (Iceland) and Vancouver (Canada) already consume energy supplied almost exclusively from renewable sources. The Chinese are working with investment and technology supplied by the Singapore government to build an eco-city in Binhai, named the "Sino-Singapore Tianjin Eco-city" while India is working on Gujarat International Finance Tec-City or GIFT which is to be a fully self-sustaining city.

Gwanggyo City Centre in South Korea and Zenata in Morocco are some more planned sustainable cities. These are just a handful of the many cities leaning towards new urbanism for the future.

New Urbanism is an urban design movement which promotes environmentally friendly habits by creating walkable neighbourhoods containing a wide range of housing and job types. It arose in the United States in the early 1980s. It has slowly influenced a wide variety of aspects of real estate development, urban planning, and municipal land-use strategies. It also focuses on regenerative architecture, which incorporates reusing deserted spaces into the increase of green spaces by utilising cost-effective design strategies. An old rail line in Bangkok has been changed over into Phra Pok Klao Sky Park. The New York High Line project is perhaps the most seasoned illustration of regenerative architecture, where an unwanted rail line is reused into an elevated park and party space for its residents.

The development of smart cities today will play a huge role in the fight for climate action in the long run. More than half the world's population lives in cities today, according to the United Nations. Given the unprecedented levels of urban migration in recent decades, in conjunction with climate change, it is necessary to recognise that human livelihood in a significant urban agglomeration has had a big impact on nature.

It is absolutely imperative that the improvement of existing building opportunities in disadvantaged areas in terms of design, physical conditions, and efficiency of energy use be done. According to projections, the adaptation of housing standards for new and existing buildings has the greatest potential for increasing energy efficiency within the EU and thus combating climate change.

Smart cities run all the more efficiently and are usually natural producers of both financially and economically taxing things like energy. This directly improves the city's economy. Public services like streets, schools, and clinics further develop which directly influences well-being and productivity. Smart cities can likewise increase networking between individuals, prompting a more positive and cooperative way of life. Tracking of data and digitalization can take into consideration the requirements of the city's occupants. These cities are intended to assist our planet in becoming greener by the day.

Agenda 1

Case Study 1

Management of liquid radioactive effluents from hospitals where public sewage system is not established

Country: India
Level: National

Summary
This case study aims to showcase ways of efficient liquid radioactive waste disposal in hospitals in underdeveloped areas.

The problem:
The prime source of liquid radioactive waste generation in hospitals is high-dose radionuclide therapy facilities, as high levels of activity are handled in such facilities. The most common radionuclide therapy worldwide is radioiodine therapy and the same is the case in India too. As per the existing regulations, radionuclide therapy using I-131 with the activity of more than 1.11 GBq is carried out in isolation wards with attached toilet facilities. Plumbing lines from these toilets are connected to a delay-decay tank in order to allow the radioactive effluents to decay to an acceptable limit, and eventually be released into the Public Sewage System.

Though radioiodine therapy is a proven method for the treatment of Ca- thyroid patients, it was limited, till recent times, to hospitals in major cities mainly because of the difficulties in the management of radioactive liquid effluents arising from the therapy wards. Around 80% of the administered activity is released through patient excreta in the first 48 hrs of treatment. Hence, an effective waste management system should be in place in order to reduce the environmental radiological impact.

Solutions being undertaken:

In India, there are “110” hospitals providing high-dose radioiodine therapy, and radioactive waste generated in the form of liquid effluents from these facilities is decayed using a dual delay-decay tank system before discharging to the main sewage line. The capacity of the tank is 3000 litres per patient bed. The radioactivity concentration should not exceed 22.2 MBq/m3 when releasing it to the main sewage system as stipulated in Atomic Energy (Safe Disposal of Radioactive Wastes) Rules, 1987. On a few occasions, when the hospital is on the outskirts of cities, they are not connected with the established sewage systems, and hence, the management of such wastes becomes a challenge. In order to facilitate the patient treatment and management of radioactive waste generated in such scenarios, a potential alternative to public sewage systems for radioiodine therapy facilities has been established.

One of the solutions would be that after due decay to an acceptable limit from the delay-decay tank, the effluents can be transferred to a septic tank, made of concrete. Further management of these wastes from septic tanks is either by manually collecting and transferring these wastes to municipal sewage plants or by permanently storing them in soak pits within the facility.

Potential for replication:

Replication is possible in underdeveloped areas where a proper disposal system has yet to be implemented.

Case Study 2

Phasing-out DDT and Sustaining Livelihoods

Country: China
Level: National
SDG Addressed: SDG 12

The problem:
China started producing DDT in the 1950s. At its production peak, it had 11 facilities producing 21,000 tonnes. In 1983, China stopped large-scale production and agricultural application of DDT, and since 1995 production has averaged 5,000–6,000 tonnes/yr.

Solutions being undertaken:
A national ban was issued in 2009 for the production, distribution, use, and import of POPs pesticides, including the use of DDT. DDT production facilities have been dismantled, and studies on DDT levels in the marine environment already show a decline in DDT levels as compared to the project's baseline. By demonstrating Integrated Pest Management (IPM) approaches in pilot areas for important cash crops (apples, citrus, cotton), the project spurred production and use of alternatives and phased out Dicofol uses in agriculture, helping safeguard and improve livelihoods and incomes of farmers who received higher prices for DDT-free cash crops.

Potential for replication:

The potential for replication is high in areas where there is a large agricultural sector for continued sustainable practices.

Case Study 1

Managing spontaneous volunteers in the response and recovery of natural disasters

Country: Chile, Argentina, South Korea, UK
Level: National, Subnational, Local
SDG Addressed SDG 11 – Sustainable Cities and Communities

Summary
This case study aims to enhance disaster management practices by involving spontaneous volunteers following a natural disaster in Chile and Argentina, using lessons from implementing ISO22319 in the UK.

Presentation objectives:

- To show the role of national, sub-national and local governments in the UK in the development of the initial policy and plans for implementing ISO22319 on spontaneous volunteers.
- To show how we used the UK policy and plans and translated those into local governments in Chile and then into Argentina – constantly enhancing the policy and making it more transferable to new countries.

- To show how the policy and plans for local government will translate into a national policy in Chile and Argentina.
- To show how the content of the policy and plans have differed (and how they were the same) for the UK, Chile, and Argentina.
- To share policy makers' experiences and lessons learned from developing a policy on spontaneous volunteers using ISO22319.

Results and impacts

To better understand the impact of ISO22319 and the SV policy, interviews were held with local government officials from different countries. Below are a number of quotes from these government officials:

Increased capacity and speed to respond to disasters:

"We have been able to increase capacity to deal with spontaneous volunteers by training Rotary international and Civil Service representatives. This has led to quicker response times, as we now have people on call to deal with the influx of spontaneous volunteers … helped to reduce risk for the volunteers … now accepted by a small group of spontaneous volunteers who previously worked in the floods and found it difficult to work with the Local Authority – and made a commitment to working with us" - Barbara Sharratt, Emergency Planning Officer, Somerset County Council, UK.

New confidence from exercising the policy and plans:

"*We have carried out two live play exercises involving members of the community role-playing as 'spontaneous volunteers' - one scenario around an evacuation and one scenario regarding spontaneous volunteers presenting to volunteer for oil pollution clean-up*" - Laura Edlington, Emergency Planning Officer, Lincolnshire County Council, UK.

Raised awareness in the public of how to respond and have good practices:

"*The project has impacted positively our region and it has consistently attracted media attention. Our region is quite exposed to natural hazards. Developing a plan on spontaneous volunteers is making us more aware of all the stages and actions we need to take to manage properly spontaneous volunteers in times of disaster. This will help us avoid several issues we had in the past because we didn't know how to include spontaneous volunteers in our emergency plans.*" - Alex Tardón, Director of Emergency Planning, Biobio Regional Government, Chile.

Potential for replication:

Initially, the policy and plans were developed in two regions in the UK (Somerset and Lincolnshire) and then later reproduced in Chile and Argentina. Going forward, the policy and plans will be replicated in South Korea and Kenya. Potential exists for this work to be replicated in NGOs, which take responsibility for working with spontaneous volunteers. Replication to NGOs has been done in the UK and there is scope for this in Chile.

Agenda 2

Case Study 2

ASTM International Standards Supporting Sustainable Concrete Construction

Country: Zambia
Level: Local
SDG Addressed: SDG 11 – Sustainable Cities and Communities

Summary
The objective of this case study is to show how ASTM International Standards on Concrete and Concrete Aggregates have been used in Zambia, the United States, and twenty other countries with two main goals. The first is to increase the potential for recycling building materials (concrete in particular), reducing the amount of these materials that end up in landfills. The second is to codify practices for adding water, notably allowing for the use of recycled water, to concrete at a job site. The implementation of this second standard led to water conservation and enhanced the quality of raw materials used in the construction industry. This contributes to the achievement of different SDG Goals and Targets, including SDG 11.1 "By 2030, ensure access for all to adequate, safe and affordable housing" and SDG 1.6 "By 2030, reduce the adverse per capita environmental impact of cities".

Results and impacts

The new standard allows industry to develop a more sustainable construction practice, in which millions of cubic yards of concrete can now be recycled in a way that is safe for end-users and provides a more conscious approach to environmental stewardship. Further, the standard creators enhanced environmental stewardship due to: reused materials that might otherwise be placed in landfills and water conservation on account of acceptable use of recycled water on the job site. Zambia's experience confirms the aspects of lower costs and environmental stewardship while also pointing to sustainable construction. In Zambia, the National Construction Council compels the national standards body, the Zambia Bureau of Standards (ZABS), to identify standards needed for the construction industry rather than allowing the industry to self-identify needed standards. For this reason, ZABS has adopted C1697 and C1603. With respect to ASTM C1697, the diversification in the use of different raw materials in the Zambian Construction Industry to enhance cohesion and durability in the formulation of mortar or concrete led to the adoption of the standard to ensure the quality of materials used. Regarding ASTM C 1603, the standard was adopted to ascertain the content of impurities (solids) in the water to ensure quality raw materials are used by the industry. The use of these standards promotes the recycling of the materials to be used in the construction industry.

The use of these standards promotes the recycling of the materials to be used in the construction industry.

Potential for replication

Concrete is a local material as it is not traded across borders but rather produced and transported to nearby local work sites. In addition to the United States, twenty other nations located in Africa, Asia, the Caribbean, Latin America, and the Middle East report citing one or more of the listed standards.

Questions a Resolution Must Answer

Agenda 1

1. What measures should be implemented by governments to ensure the regulation of hazardous waste?
2. Which agencies must be employed for the improper disposal of hazardous waste to be regulated and mitigated?
3. Are the existing nuclear waste disposal guidelines adequate for safe disposals? If not, how can states and their local governments manage and combat the issue?
4. In what ways can entrepreneurship be incorporated into domestic policy to facilitate positive impact?

Agenda 2

1. How can goal 11 of the SDGs be achieved through urban public management and planning?
2. What steps are required for the governments to take so as to address the negative impacts of constructing smart cities, as well as their consequences?
3. Is the SDG 11 identical for all countries? Should there be any distinction concerning the implementation with respect to the needs and the economical situations in different parts of the world?
4. What resources and agencies can be relied upon for the planning, development and construction of smart cities in underdeveloped and economically disparaged countries?

SUGGESTED MODERATED CAUCUS TOPICS:

Agenda 1

- Importance of proper nuclear waste management.
- The growing crisis of DDTs and its impact on the environment.
- The crisis of global medical waste after the COVID-19 pandemic
- Storage solutions for radioactive waste in low-income areas.
- How to reduce, reuse and recycle toxic waste (and radioactive waste).

Agenda 2

- Ways to implement immediate response systems for natural disasters with respect to smart city planning.
- Cost-sensitive, and efficient methods to create sustainable irrigation and agricultural infrastructure.
- Addressing disproportionate wealth distribution in smart urban areas.
- Implementation of sustainable building practices and efficient use of space in new developmental projects.

SUGGESTED RESEARCH TOPICS:

Agenda 1

1. Types of waste disposal
2. Nuclear waste disposal
3. Pre-existing regulations and legislation
4. Diamond Batteries

Agenda 2

1. Examples of green smart cities
2. Sustainable concrete construction
3. Alternative materials
4. Irrigation systems
5. Technological and scientific breakthroughs

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