Forum: United Nations Commission on Science and Technology for Development (UNCSTD)

Issue: Leveraging Artificial Intelligence to Address Hunger and Alleviate Poverty

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Introduction

Leveraging Artificial Intelligence to eliminate poverty and hunger is a complex and complicated issue. This document aims to explore the interlink of these two crucial issues and provide recommendations for promoting global peace and sustainable development. As a global community fighting with escalating hunger and poverty. AI can truly change the farming industry to the next level by encouraging productivity and efficiency. This helps to improve stability and can optimize supply chains ensuring that food reaches those in need more effectively. AI and prosperity are built on a foundation of security and stability. While Artificial Intelligence offers promising solutions to hunger and poverty it is essential to address the risks. Keep in mind that people in developing economic conditions often lack access to AI due to cost barriers, limited digital literacy, lack of awareness, and deflecting situations that prevent them from benefiting from technological advancements.

Definition of Key Terms

Agriculture

The practice of growing crops and raising animals for food, and other products.

Background Information

In the last 200 years, society shifted from the belief that poverty was a prerequisite for work and economic growth to the realization that it was a complex multidimensional social issue that needed empowerment, structural change, and social development. AI, therefore, complements this modern understanding through active poverty reduction by using societal upliftment. For example, AI-enabled learning tools can offer personalized lessons that unlock quality educational opportunities and mobility in poor communities. The poor are empowered when available training in skills and career advancement opportunities are accessible to them to secure higher-paying jobs. AI also strengthens social safety nets by better-targeting welfare programs and enhancing efficiency to make sure the right help is available where needed. Because AI deals with the factors-economic, social, and political-interlinked in poverty, it will allow structural changes that serve to reduce poverty and equally offer opportunities to all. A good example is Kenya, where AI is actively supporting health care and the upliftment of society at large, especially in rural areas.

Major Parties Involved

The United States of America

With many of the most vast tech companies in the world having headquarters in the United States of America, it stands as an absolute powerhouse in AI. It has a strong and vibrant economy, which encourages innovation and teamwork, with heavy investment in AI research and development. This healthy landscape has contributed not only to technological advancement but also to tackling poverty. We now have a host of uses for AI in fighting economic inequality along many dimensions: better access to basic services, such as health and education in deprived communities; new job creation due to newly emerging industries; and helping to fine-tune social

welfare programs so that targeted aid reaches those people who need it most. The U.S., through such projects and opportunities improved by AI, has continued reducing poverty by improving economic mobility.

China

Since the late 1970s, economic reforms in China perpetuated an export-oriented growth model at the expense of rural villages, left behind by rapid urbanization and industrialization. However, with new technologies in the form of delivery services, AI-powered internet marketing, and many more, villages are increasingly able to overcome these barriers and establish viable and profitable businesses. AI-driven platforms help entrepreneurs in rural areas sell their products to wider markets by optimizing marketing strategies and increasing the visibility of their products, while advanced delivery systems reduce the logistical barriers that allow rural businesses to move into and operate effectively within the digital economy. This transformation has also played a critical role in poverty reduction in these villages, opening up new economic avenues for them, paths towards growth, and ultimately helping the communities lift themselves out of poverty.

The United Kingdom

During the pandemic, 400,000 children were lifted out of poverty due to a £20 weekly Universal Credit rise. However, due to cost-of-living issues, child poverty worsened. Tower Hamlets had the highest rate of child poverty in the UK, while Manchester and Birmingham also have high rates. To show changes and variety across time, the interactive map and chart that follows look at child poverty data by population, region, and country.

Canada

Canada has assumed a leading role in the world by championing human rights, economic growth, and responsible innovation in AI. Canada has realized a 50% increase in foreign investment, with over 850 companies and multiple research institutes specializing in AI. Through programs such as the Pan-Canadian Artificial Intelligence Strategy, Canada connects leading-edge research with commercialization while infusing its values into international AI development. AI can consequently reduce poverty by improving access to fundamental services, creating jobs, effective management of social welfare, and providing reasonable housing. The application of responsible AI means that Canada is on a good track toward economic growth with balance and social equity, which would play a significant role in reducing poverty and further creating an inclusive society.

Timeline of Key Events

Date	Description of Event
1981-2011	AI has increasingly contributed to poverty reduction since the global launch of initiatives like the 1996 World Food Summit, the Millennium Development Goals, and the Paris Declaration on Aid Effectiveness. AI technologies hold a great promise of increasing aid effectiveness by fine-tuning evidence-based resource distribution and

	sharply identifying vulnerable populations to better ensure that aid reaches those in need. AI-powered systems provide monitoring and forecasting concerning poverty-related issues, such as food insecurity, observing data for trends, and issuing early warnings. AI has supported economic growth due to improved access to education and job training, giving people of poverty-stricken areas skills that make available better job opportunities. Equally, AI-driven healthcare solutions have helped alleviate poverty through better access to more affordable care and improved health outcomes that reduce the financial burden of low-income families. With such innovations, AI is a contributor toward global goals to reduce poverty and hunger, especially in the underdeveloped world.

2012-2013	The decline in global poverty between 2012 and 2013 managed to relieve 130 million people from poverty. Primarily, this came from the economic growth of China and India. AI has been acting as a driver in contributing towards a reduction in this segment of poverty by economic development through innovations in agriculture, health care, and financial inclusion. Precise farming is one sector where AI-enabled high productivity, while mobile banking and telemedicine offer better access to basic services. AI also aided in optimization to facilitate aid distribution so that resources flow effectively, therefore acting in poverty alleviation, particularly in Sub-Saharan Africa.
2015-2016	According to the 2015-2016 Global Monitoring Report, the number of people living in poverty fell to 9%, although challenges are still evident with the World Bank's revised forecast for economic growth

	at 33%. AI has been instrumental in these challenges: improving economic growth and reduction of poverty. AI-driven innovations in the fields of agriculture, particularly precision farming-have amplified productivity in rural areas, while mobile banking has extended financial services to include better access to credit and other amenities for the underserved. AI also contributes to the optimization of targeting regarding aid and social safety nets, leading to improved resource allocation to people in need. Furthermore, platforms for AI-powered education and skills training have provided opportunities to the poor to access inexpensive learning, hence better gainful employment, which reduces poverty.
2019-2022	In 2019, India's poverty rate was at 6%, in which several million had been uplifted from it, though 77 million fell below the poverty line. Though facing setbacks due to the

	COVID-19 pandemic and crises in various regions, inclusive of the Russia-Ukraine war, AI has an important role in the reduction of poverty. AI-driven agriculture innovations, such as precision farming, have the power to increase yields and raise farming incomes among small farmers-especially in poorer regions when applied. AI-powered mobile banking and financial technologies increased access to basic banking services, particularly to the under-served sections of society, and improved financial inclusion toward better economic opportunities. AI also improves education through personalized learning tools. Quality at scale increases employability by giving people skill sets that create improved job prospects. AI further supports social safety nets by optimizing aid distribution for effective targeting of resources among those in need and assists in cushioning against inflation and economic instability among vulnerable populations.

2023-2024	While the global poverty headcount ratio has been pegged at 9%, AI has been instrumental in a set of innovations that have tried to resolve poverty. Fronted by uneven economic recovery, AI-driven solutions have helped improve agriculture through precision farming-developing productivity and income for farmers in low-income regions. AI-driven mobile banking and financial inclusion technologies have accorded the underserved access to financial services, with the ability to build savings, secure loans, and improve livelihoods. AI also plays a central role in education, providing personalized learning platforms and making quality education more accessible to people in poverty-stricken areas for better job prospects. Second, AI can improve the efficiency of social safety nets by better targeting aid to those in need and cushioning people from economic shocks-a key determinant in reducing poverty.

Previous Attempts To Resolve This Issue

Multiple efforts are addressing this global issue but 4 main trials stood out :

1. **Enhancements of Food Security**

   Artificial Intelligence enhances food security and supply chain optimization through its features like predictive analytics, real-time monitoring, and real-time detection of issues at the ground level, such as soil health and pest attacks. AI helps optimize route and inventory, reduce costs, and enhance operations efficiency. AI finds anomalies within the chain that need better quality food, contributing to a resilient and sustainable food system. For instance, IBM has used AI through its platform, IBM Food Trust, making food supply chains far safer, more efficient, and transparent from farm to table;

2. **Land Use Monitoring through Remote Sensing**

   This varies in importance, from land use monitoring with detailed and real-time data on the change over time in land cover, via satellite imagery and aerial surveys, which enable the systematic observation of particular land-use patterns, such as urban development, agricultural expansion, and deforestation. This constitutes important information concerning the environmental impacts due to various land use decisions and their proper management. It can be done remotely by integrating remote sensing with geographic information systems to visualize and analyze spatial data to derive informed decisions. Moreover, land use change detection has been able to strike a balance between development and the conservation of the environment, apart from indicating what should be done as sustainable practices. For instance, NASA uses remote sensing technology through the Landsat program to monitor land-use changes all over the world. It thus provides vital data on urban development, deforestation, and expansion of agriculture;

3. **Financial Inclusion Platforms**

One cannot talk about reduced poverty without financial inclusion. Accessible financial services and products play a big role in stability and expansion in any economy. Through understanding what clients want, artificial intelligence can raise this by improving service delivery and identification of those excluded by the financial inclusion platforms. Access to financial services allows them to make investments in new endeavors and reduce risks, hence improving their quality of life. As guided by the goals, as mentioned in the source, the concept of financial inclusion develops economic resilience for shared prosperity through an empowered citizenry. For example, AI-driven insights are used to extend financial services to unbanked populations by M-Pesa in Kenya to enable savings, investments, and credit access through mobile phones;

4. **AI in Healthcare for Poverty Reduction**

AI supports the management of hospitals in increasing management efficiency, optimizing resource utilization, and decreasing operational expenses. Therefore, health systems can provide improved services at a lower cost, making health care accessible to sections of society that are economically deprived. Subsequently, with improved diagnostic accuracy and early diagnosis of disease, AI facilitates timely interventions that avoid complications in time among poor populations who are most vulnerable to diseases such as cancer, tuberculosis, and diabetes. AI further promotes telemedicine, where consultations from rural and underserved areas are allowed without the need to keep the patients in those places. This reduces several costs related to travel and, at the same time, increases access to health care where it is most needed. These are just a few ways in

which health disparities among the poor can be reduced through AI while furthering poverty reduction by making health services more accessible and efficient.

Possible Solutions

1. **Enhanced Access to Education**

   By offering individualized learning experiences catered to each student's needs, AI in education can dramatically lower poverty while enhancing academic achievement and graduation rates. AI provides scalable tutoring services, increases access to high-quality education in underprivileged locations, and identifies difficult pupils for prompt treatments by evaluating performance data. Moreover, AI has the potential to reduce educational expenses, encourage lifelong learning, and provide students with work skills, thereby helping them find better job opportunities and break the cycle of poverty;

2. **Precision Agriculture for Sustainable Food Production**

   AI-powered automated farming solutions increase farming output and optimize resource use, improving environmentally friendly methods and food security. AI enables data-driven decision-making with technologies like sensor-based watering systems and drones for crop monitoring, giving farmers real-time insights and practical suggestions. By enhancing their economic resilience and food access, this empowerment eventually lifts farmers out of poverty by increasing crop yields while reducing environmental impact;

3. **Streamlined Social Services Delivery**

AI-powered streamlined social service delivery can greatly improve accessibility and efficiency for disadvantaged groups. AI ensures that people obtain timely service by improving the distribution of resources and decreasing wait times through the automation of administrative procedures. Furthermore, by identifying community needs and customizing services in response, AI-driven data analysis can assist solve problems like healthcare access, housing instability, and unemployment. In the end, this improved delivery of social services strengthens people and families, promoting more economic stability and lowering poverty.

Biography

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