Rural Development with the Help of Artificial Intelligence

Adarsh Singh Punjeta

S.U.S. Govt. College, Matak-Majri Indri, Distt. Karnal (Haryana),India

*Abstract:-*About seventy percent of the Indian population lives in villages or in rural areas. Even after more than seventy years of Independence the rural India is lagging behind on the developmental index. So for the true of development of India the villages cannot be neglected rather the villages should be given special care. The Government of India is highly concerned for the development of rural India. Now a days technology is playing very important role in almost every walk of life. Accordingly the technology can be the real game changer for the development of rural India. Artificial Intelligence or AI in short, is the future of the modern world and accordingly it has a lot for the development of rural India. This paper deals with the potential of the Artificial Intelligence in the development of rural India.

Keywords- the Indian population, rural India and development

I. INTRODUCTION

In the simplest of terms Artificial Intelligence means to make the machine intelligent. In other words, the goal of the Artificial Intelligence is to make the machine think like human beings. Hence Artificial Intelligence is also referred to as Machine Intelligence. Technically speaking Artificial Intelligence or Machine Intelligence, is intelligence demonstrated by machines, in contrast to the natural intelligence displayed by humans and other animals. In computer science AI research is defined as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals [1]. Colloquially, the term "artificial intelligence" is applied when a machine mimics "cognitive" functions that humans associate with other human minds, such as "learning" and "problem solving" [2]. The main Artificial Intelligence technologies are Machine Learning, Computer Vision, Knowledge Representation, Expert Systems, Audio Processing and Natural Language Processing. In the modern day a lot of research is going on in the domain of Artificial Intelligence and it is proving its worth. The noticeable application areas of the Artificial Intelligence are Health Care, Robotics, Military, Agriculture, Retail, Manufacturing, Games Playing, Art, Banking & Finance, Automobile, Energy, Advertising etc. Also the Artificial Intelligence has a tremendous potential in the field of rural development.

II. RURAL DEVELOPMENT

Rural Development is very vital in the context of India. India is a large country and most of its population is living in the rural parts or in the villages. Without rural development we cannot be considered as a developed country. Due to the development in the urban areas the rural population is shifting towards the urban areas better future. This is also putting a lot of pressure on the urban infrastructure. So the answer is to develop the rural areas in order to check the population shifting towards the urban areas. Rural development is the nothing but a method of improving the quality of life and economic well-being of people living in the villages rural areas. Rural development has mainly focused on the exploitation of the natural resources based on agriculture and forests. However, changes in global production networks and increased urbanization have changed the character of rural areas. Increasingly tourism, niche manufacturers, and recreation have replaced resource extraction and agriculture as dominant economic drivers [3]. The need for rural communities to approach development from a wider perspective has created more focus on a broad range of development goals rather than merely creating incentive for agricultural or resource based businesses. Education, entrepreneurship, physical infrastructure, and social infrastructure all play an important role in developing rural regions [4]. Rural development is also important due to its focus on locally produced economic development strategies. In contrast to urban areas, which have many similarities, the rural areas are very different from each other. Because of this there are a number of different rural development methods employed in the different parts of the world globally. Rural development is a comprehensive term. Its main focus is on the development of areas outside the tradional urban economic system.

Artificial Intelligence for Rural Development
The rural areas require three main things for their upliftment viz. Agriculture, Health, & Education and in all these three areas Artificial Intelligence has a lot to offer. The potential of the Artificial Intelligence is provided as follows.

Artificial Intelligence in Agriculture

Agriculture is the chief occupation of the people living in villages or in the rural. Improvement in agriculture will automatically improve the standard and quality of life of the rural people. Agriculture is witnessing rapid adoption of Artificial Intelligence (AI) as well as Machine Learning (ML) for agricultural products as well as for farming techniques. Particularly the Cognitive computing is well set to become the most important technology in the agriculture services as it capable of understanding, learning, and responding to different situations so as to increase efficiency. By giving access to the Artificial Intelligence based services viz. chatbot and other conversational techniques to all the farmers in the rural areas will help them keep pace with technological advancements as well as apply the same in other areas like daily farming etc. so as to benefit from these Artificial Intelligence based services. The main areas of the Artificial Intelligence benefits for the agriculture are [5]:-

      Growth driven by IoT
      Image based insight generation
      Identification of optimal mix for agronomic products
      Health monitoring of crops
      Automation techniques in irrigation and enabling farmers

Artificial Intelligence in Education

Education is very important in the modern world. Education opens a lot of avenues for the human being. It is a well known fact that the educational index of the rural India is also poor. So education is to be delivered with the utmost priority. Artificial Intelligence is very help for educating the rural population as well. Artificial Intelligence can provide the following support in educating the rural people and benefitting them [6] :-

Artificial intelligence can automate basic activities in education, like grading, evaluation etc.
Educational software can be adapted to the learners' needs
AI based softwares can point out places where courses need improvement Learners could get additional support from AI tutors
AI-driven programs can give the learners and educators helpful feedback it is altering how we find and interact with information
AI base Expert Systems could change the role of teachers
AI can make trial-and-error learning less intimidating
Data powered by AI can change how schools find, teach, and support students AI may change where students learn, who teaches them, and how they acquire basic skills

Artificial Intelligence in Health Care

In the rural areas the health index is also on the lower side so improvement in the health sector for the rural areas is the need of the hour. Artificial intelligence (AI) in healthcare is the use of algorithms and software to approximate human cognition in the analysis of complex medical data. Specifically, AI is the ability for computer algorithms to approximate conclusions without direct human input. The primary aim of health-related AI applications is to analyze relationships between prevention or treatment techniques and patient outcomes [7]. A number of Artificial Intelligence based Expert Systems such as MYCIN have proved to be highly beneficial for the health sector. MYCIN is an Expert System for the disease diagnosis and has been very successful. So clearly the Artificial Intelligence can prove to be a boon for the rural health sector.

III. CONCLUSION

The rural development is very important in the today's scenario. It is important that every citizen of the country should be benefitted. For this the development should not be limited to the urban parts only but also creep into the grassroots levels as well. From this paper it is very clear that the field of Artificial Intelligence has a lot to offer for the rural development. So the Government as well as the other organizations should invest in the Artificial Intelligence for the upliftment of the rural areas.

REFERENCES

[1] Definition of AI as the study of intelligent agents:Poole, Mackworth & Goebel 1998, p. 1, which provides the version that is used in this article. Note that they use the term "computational intelligence" as a synonym for artificial intelligence. Russell & Norvig (2003) (who prefer the term "rational agent") and write "The whole-agent view is now widely accepted in the field" (Russell & Norvig 2003, p. 55).
[2] Russell & Norvig 2009, p. 2.
[3] Ward, Neil; Brown, David L. (1 December 2009). "Placing the Rural in Regional Development". Regional Studies. **43** (10): 1237–1244. doi:10.1080/00343400903234696.
[4] Rural development research: a foundation for policy (1. publ. ed.). Westport, Conn. [u.a.]: Greenwood Press. 1996. ISBN 0-313-29726-6
[5] https://www.mindtree.com/sites/default/files/2018-04/Artificial%20Intelligence%20in%20 Agriculture.pdf
[6] https://www.teachthought.com/the-future-of-learning/10-roles-for-artificial-intelligence-in-education/
[7] Coiera, E. (1997). Guide to medical informatics, the Internet and telemedicine. Chapman & Hall, Ltd..