**INFORMATION COMMUNICATION TECHNOLOGY HELPS FOR BETTERMENT OF RURAL PEOPLE’S LIFESTYLE**

**by**

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ICT means Information Communication Technology. Information and Communications Technology (ICT) is a comprehensive term encompassing not only Information Technology (IT) but also emphasizing the vital role of seamless communication and the fusion of telecommunications, which includes both traditional telephone lines and wireless communication (telephone lines and wireless signals) and computers, as well as necessary enterprise software, middleware, storage and audiovisual, that enable users to access, store, transmit, understand and manipulate information. Components of ICT are people, Data , Hardware , Software , Procedure , Information. ICT works on the basis of some inputs then processing the inputs and give a optimum output. This ICT not only help to the urban area and industries it also was introduced to rural are for betterment of their living standard and

In an era of rapid technological change, a country’s competitiveness and relevance in the global economy is increasingly determined by its capacity to effectively use information for design, production and marketing. An increasingly prevalent method of providing services in this context is through the use of Information and Communication Technologies (ICTs). These technologies play a crucial role in granting essential access to information and global markets, bridging the gap for rural and marginalized communities by connecting them to the wealth of information resources and opportunities available worldwide.. Although the use of ICTs remains concentrated largely in the developed world, a rapid growth in information technologies has now been taking place in developing countries and agriculture . The necessity of developing the agricultural capacity to generate and disseminate knowledge and exploit it as a powerful tool to derive societal transformation .

ICT has bought tremendous improvement in rural areas. Information is the key to democracy. With the advent of Information Technology (IT), it has become possible for common man to access global information.

Before the introduction of Information Communication Technology (ICT) in Indian agriculture, the sector faced various challenges and limitations that hindered its efficiency and productivity. Here are some key aspects of the Indian agriculture scenario before ICT was widely adopted:

1. **Traditional farming practices:** Agriculture was primarily reliant on age-old traditional practices handed down through generations. While some of these practices were effective, they were not always optimized for modern efficiency and sustainability
2. **Inadequate infrastructure**: Rural areas, where agriculture is predominantly practiced, often lacked proper infrastructure, including good roads, electricity, and telecommunication networks. This hindered the smooth flow of goods, services, and information.
3. **Low productivity**: The productivity of Indian agriculture was relatively low due to factors such as limited access to improved seeds, fertilizers, pesticides, and modern machinery. This resulted in lower yields and reduced income for farmers.
4. **Inefficient supply chain**: The supply chain from farm to market was inefficient, characterized by multiple intermediaries, which often resulted in high post-harvest losses and low return to the farmers . Also reduce in the quality of the product.

The government of India of late has been emphasising upon the implementation of the Digital India programme, which empowers citizens with e-access to government services and livelihood-related services. The latest Union Budget for 2022 places a significant emphasis on enhancing digital connectivity in rural areas, recognizing it as a pressing necessity. The primary goal is to furnish rural communities with essential amenities through the widespread deployment of broadband connectivity.

Information Communication Technology (ICT) has had a transformative impact on the Indian agriculture sector, bringing about significant changes and improvements. Here are some ways in which ICT has changed Indian agriculture:

1. **Access to information**: ICT has facilitated easy access to crucial information for farmers. Weather forecasts, market prices, crop advisories, best agricultural practices, and government schemes are now readily available through mobile apps, websites, and SMS services. This enables farmers to make informed decisions, optimize their farming practices, and improve crop yields.
2. **Precision agriculture**: ICT tools such as drones, satellite imagery, and GPS-enabled devices have enabled precision agriculture. Farmers can now monitor their fields, identify crop health issues, and apply inputs (e.g., fertilizers, pesticides) precisely where needed. This targeted approach increases efficiency and reduces resource wastage.
3. **Supply chain efficiency:** ICT has improved supply chain management in agriculture. With better logistics and tracking systems, it can reduce the post harvesting loss and the consumers get their product very easily and quick with maintaining the quality.
4. **Access to finance**: Mobile banking and digital payment systems have made it easier for farmers, especially in remote areas, to access financial services. They can now easily get the products from online platform by net banking and easily they can access their credit system.
5. **Agri-tech startups**: The rise of Agri-tech startups in India has brought innovative solutions to farming challenges. These startups leverage ICT to provide services like soil testing, farm management, e-commerce platforms, and agricultural extension services, all aimed at enhancing productivity and profitability.
6. **E-commerce for agricultural inputs**: Online platforms have emerged that enable farmers to purchase seeds, fertilizers, and other agricultural inputs directly from suppliers. Through this platform farmers can buy fertiliser and other things by judging prices from every supplier,

Acknowledging the transformative and service-enhancing capabilities of Information and Communication Technology (ICT), the Government of India is actively executing a National e-Governance Plan in Agriculture (NeGPA) under the purview of its Department of Information Technology. It was initially introduced in the fiscal year 2010–2011 across seven pilot states with the objective of catalyzing swift advancements in agriculture through the utilization of Information and Communication Technology (ICT).

Some ICT models developed by Indian government and their uses are discussed as below

1. **E-Choupal** – It was launched in June 2000 by ITC’s agribusiness Division is enabling Indian agriculture to significantly enhance its competitiveness by empowering Indian farmers through the power of the Internet.
2. **Ikisan project** - The Ikisan is the ICT initiative of the Nagarjuna group of companies that happens to be the largest private entity sup-plying farmers’ agricultural needs. This platform serves as a comprehensive information hub for Indian farmers, offering a single point of access to a wealth of online resources. It includes in-depth content covering topics such as crops, crop management practices, fertilizers, pesticides, and a wide array of other agriculture-related materials.
3. **Kisan call centres**- The KCCs—the important information gateway for the farmers—were launched in India in 2004 by the Department of Agricultural and Co-operation with focus on technologies such as desktop computer system with Internet connectivity, high bandwidth telephone lines, and telephones with headphones and teleconferencing facility.
4. **eNAM** - The National Agriculture Market, called the eNAM, is an online trading platform for agriculture and related products in India. It helps in better price discovery and provides facilities for improving the existing market system.

Govt ICT projects implemention is not so easy in rural areas . Extension officers , Scientists and Govt have to face different types of problem to overcome this problems.

1.Lack of sustainable and affordable power supply

2.Limited funding opportunities

3.Selecting a suitable technology

4.Poor infrastructure

5.Technological illiteracy

6.High costs of ICTs

7.Inexperienced computer users

8.Lack of trained technical support

Improvements in Information and Communication Technology (ICT) are ongoing and can be expected to continue evolving in various ways. Here are some potential areas where ICT is likely to see improvement:

**1.Faster and More Reliable Connectivity**: The expansion of 5G and the development of 6G networks will lead to faster and more reliable internet connections. This will enable quicker data transfer, reduced latency, and support for emerging technologies like augmented reality (AR), virtual reality (VR), and the Internet of Things (IoT).

**2.Increased Bandwidth**: Improvements in data compression techniques and network infrastructure will result in increased bandwidth, allowing for the seamless transfer of larger files and higher-quality multimedia content.

Edge Computing: Edge computing, which brings computational resources closer to the data source, will become more widespread. This will reduce latency and enable real-time processing for applications like autonomous vehicles, smart cities, and industrial automation.

**3.Artificial Intelligence (AI) Integration**: ICT will increasingly leverage AI and machine learning to enhance various applications, such as natural language processing, image and speech recognition, and predictive analytics. This will lead to more intelligent and responsive systems.

**4.Quantum Computing**: While still in its infancy, quantum computing has the potential to revolutionize ICT by solving complex problems at speeds unattainable by classical computers. As quantum computing technology advances, it will open up new possibilities in cryptography, drug discovery, and optimization.

**5.Enhanced Security:** As cyber threats evolve, ICT will see continuous improvements in cybersecurity measures. This includes more robust encryption, advanced threat detection algorithms, and better user authentication methods.

**6.Augmented and Virtual Reality**: ICT will continue to advance in the realm of AR and VR, offering more immersive experiences for gaming, training, education, and remote collaboration.

**7.Blockchain and Distributed Ledger Technologies:** These technologies will be integrated into ICT systems to enhance security, transparency, and trust in various applications, such as supply chain management, digital identity verification, and financial transactions.

**8.Cloud Computing**: Cloud services will become more sophisticated and flexible, offering scalable and customizable solutions for businesses and individuals. Multi-cloud and hybrid cloud environments will become more prevalent.

**9.Human-Machine Interaction**: Natural language processing, gesture recognition, and brain-computer interfaces will improve, making it easier for humans to interact with digital systems and devices.

**10.Accessibility**: ICT will continue to advance in terms of accessibility for individuals with disabilities, ensuring that technology is inclusive and usable by all.

**11.Environmental Sustainability**: There will be a greater emphasis on designing ICT systems with reduced energy consumption and a smaller carbon footprint, as well as recycling and sustainable

This all things are theoretical matter and govt iniciatives but in actual real life definitely ICT creates a huge vital role in the developing of lifestyle of rural peoples and agriculture system. Few years ago when ICT was not introduced to agriculture field specifically on that’s time our farmers followed the traditional method for agriculture production. This is not a bad thing but that time they can not analyse the pest attacks, some years new pests attacked the field then the farmers were totally unaware about that. They even don’t know about the right dose of fertilizers. They unaware about the soil health. In some areas they cannot get the proper weather forecast . so then they all do this as an assumption. They have not proper knowledge and ingredients that help them to overcome from these problems. In fact they don’t know about the proper market price. Due to this problem the market price fractuates greatly. So in agriculture market there were no startup or small industries that time also. In India maximum people directly involved in agriculture through different ways. So to overcome this problems through a uniform process is becoming challenge to the govt. But with the help of the IT department along with our traditional agricultural methods they introduced the ICT. Under ICT there are lots of things are present like updating through mobile , dedicated application for marketing and other problems , drones , advanced machineries, advise of the experts through phone call or massages, etc. These things not only develop the whole agriculture background but also developed the life style of a rural people and a rural farmer. Through network connectivity and the use of mobile they get proper weather forecast so they get the preparation well to face the problem moreover they can get the news of the market and prices of fertilizer, seed etc. It helps them from the losses of post harvest of the crops . Through thus initiatives they can able to maximise their production also reduced the losses. So they can make more profit and develop their lifestyle. With the help of technology they can increasing their knowledge as well as their lifestyle.

After increasing the the agricultural production there are lots of small scale industries are established at rural side. So the employment generation is happened. Also this helps to develop the lifestyle of rural people.