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REVIEW ARTICLE

SCENARIO OF DIGITAL PORTALS AND MOBILE APPS USE IN AGRICULTURE IN NEPAL

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ARTICLE DETAILS

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ABSTRACT

Traditionally, media like radio, television, and newspapers are used to spread agricultural information. Now a day agricultural industry has experienced a significant digital revolution. Numbers of digital software and mobile apps were developed and launched by governmental and non-governmental organizations in Nepal. To know the scenario of agriculture digital portals review was done in 2024. The study collected the information from various online, website, reviewing of articles and different publications. Digital tools like Smart Krishi, Tele Plant Doctor, Hamro Krishi, Digitally Enabled Seed Information System (DESIS), SMS from Agriculture Information and Training Center (AITC), Online portal developed by Agriculture Development Office Kavre and Ramechhap, Geo Krishi Farm, Krishi Bajar, Krishi Guru, Krishi Gyan, Nepali Krishi were major software and mobile apps that farmers along with agriculture technician used to gain the required information. Furthermore, these kinds of apps increase the efficiency and transparency of organizations but due to lack of awareness about the use of software and apps, poor network service may hinder the mass uses of these apps.

KEYWORDS

Digital portal, mobile apps, online application, agriculture, farmers

1. INTRODUCTION

Cloud storageThe use of agricultural information by farmers has become increasingly crucial for taking decisions in farm management (Opara, 2008). With the use of information and communication technology (ICT), farmers can monitor their crops, respond quickly to threats such as disease or pests, and increase yields (Poudel et al., 2018). A digital portal is a web-based interface that provides a single point of access to various resources, applications and services to meet the specific need of users or organization, enhancing accessibility and efficiency (Singh and Malhotra, 2019). Digital portals and mobile applications make the farmers in touch with a wide range of information, tools, and resources (Palit et al., 2024). With use of mobile technology and digital platforms, farmers easily carry out their day-to-day activities, make decisions, and acquire resources (Emeana et al., 2020). Through agricultural apps farmers can learn and adopt the technologies like improved cultivation practices, disease management practices, marketing of their products, can submit their application form as well (ADO Kavre, 2023; Regmi, 2020). Digital portals improved efficiency and accessibility, reduces physical barriers and is important in making informed decisions quickly and accurately (Laudon and Laudon, 2020; Chaffey, 2015; Davenport, 2013). It provides a centralized platform for users to access information and also centralized the data management system (Davenport, 2013).

2. OBJECTIVES

To study the different agriculture digital portals and mobile apps developed by governmental and non-governmental organizations in Nepal.

3. METHODOLOGY

The study was based on the secondary information. Information were collected from online website, reviewing of articles and different publications.

4. DISCUSSION

There were number of agriculture digital portals developed by governmental and non-governmental organization in Nepal which were discussed below:

4.1 Smart Krishi

Smart Krishi apps was developed by Anil Regmi in 2015. It produces information necessary for farmers in the form of videos and texts, format of business plans and proposals, government notices and agriculture news (Adhikari, 2023). It provides farming tips, pest and disease management practices, market price, agricultural news, soil health information etc.



Figure 1: Showing the screenshot view of Smart Krishi

Quick Response Code



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4.2 Tele Plant Doctor

Tele Plant Doctor, a mobile application designed to diagnose plant diseases using artificial intelligence (AI)(Aryal, 2024). This apps is launched in Mahadevsthan, Kavre especially focusing on potato grower (FAO, 2024). It strengthen pesticide management capacities of farmers for their crops (FAO, 2024).



Figure 2: Showing the screenshot view of Tele Plant Doctor

4.3 Hamro Krishi

Hamro Krishi is a mobile application developed by PPCR/AMIS that aims to support climate smart agriculture (MoALD, 2019). It focuses on providing critical and timely agro-climate and weather information to farmers. Through this interface farmers can get knowledge about different types of crops, its corresponding diseases and solutions, fertilizer usage information etc. One of the key features of the apps is the frequently asked questions section, which provides information on different crops and fruits.

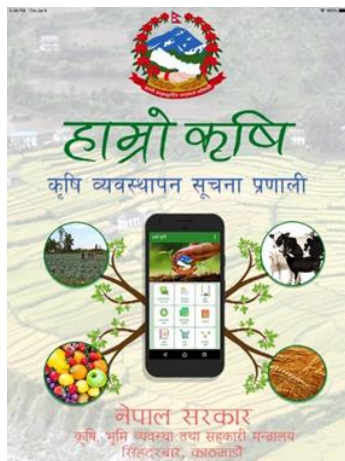


Figure 3: Showing the screenshot view of Hamro Krishi

4.4 Digitally Enabled Seed Information System (DESIS)

Digitally Enabled Seed Information System (DESIS) was the result of collaboration between U.S. Global Development Lab and USAID under the Digital Development for Feed the Future. DESIS provide an automated version of the seed balance sheet. Using unique logins, agencies will be able to place their requests and seed producers to post their seed supplies (Pradhan et al., 2020). The platform helps to aggregate and manage breeder, foundation and source seed, as well as certified seed (SQCC, 2020). This system link farmers to seed suppliers and buyers, to build a better internal Nepalese seed market. The goal of DESIS is to help farmers, grow better yields and improve livelihoods, and contributing to food security nationwide (SQCC, 2020).

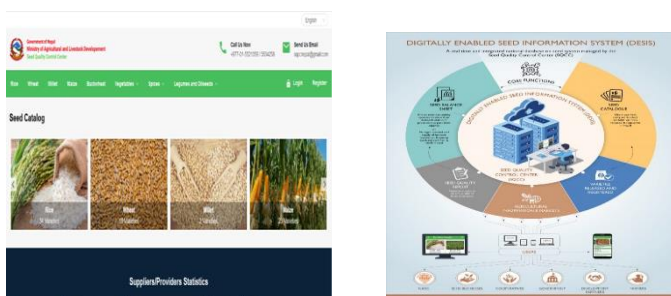


Figure 4: Showing the screenshot view of DESIS software

4.5 SMS from Agriculture Information and Training Center (AITC)

Ministry of Agriculture and Livestock Development (MOALD) - Agriculture Information and Training Center (AITC) send the mobile messages related to farming practices, what to do in certain period, weather alert message (AITC, 2023). They send messages to the technician and progressive farmers so they can disseminate the information and farmers can manage their cropping schedule. They send messages in every week (AITC, 2023).



Figure 5: Showing the screenshot message send by MOALD-AITC

4.6 Online application portal developed by ADO Kavrepalanchowk

Agriculture Development Office (ADO), Kavre develops the software for online application form; farmers can visit this site by linking the website provided by ADO, Kavre in their official page (ADO kavre, 2023). Where farmers have the option to choose the different programs in this platform and upload the necessary documents as mentioned in notice or in this website. Finally, farmers can submit their application form to ADO office, Kavre.



Figure 6: Showing screenshot of official page of ADO, Kavre

4.7 Online portal developed by ADO Ramechhap

Agriculture Development Office (ADO) Ramechhap develops the online access portal to increase the transparency of organization (ADO Ramechhap, 2023). In this platform anyone can visit and see the information of farmers/groups/co-operative who received the different subsidy program from ADO Ramechhap in different fiscal years.



Figure 7: Showing screenshot of official page of ADO, Ramechhap

Numbers of digital portals were developed by different organizations. This software were downloaded from google play store by farmers along with agriculture technician to gain the information as their need. Some of software/apps used and downloaded by users were listed below;

Table 1: List of software/apps related to agriculture with their users

| S.N | Name of apps | Number of users |
|-----|-------------------|-----------------|
| 1 | Smart Krishi | >1,00,000 |
| 2 | Tele Plant Doctor | >1,000 |
| 3 | Hamro Krishi | >2,000 |
| 4 | Geo Krishi farm | >1,00,000 |
| 5 | Krishi Guru | >100,000 |
| 6 | Krishi Gyan | >1,000 |
| 7 | Nepali Krishi | >1,000 |
| 8 | Krishi bajar | >5,00,000 |

(Source: Google play store, 2024)

4.8 Benefits and problems of digital portals

Today farmers have the opportunity to learn more about agriculture due to technological advancements (Busungu et al., 2019). Farmers can access market prices, trends, and weather forecasts, which helps them make better-informed decisions regarding what to plant and when to harvest which reduces risks and improves profitability (Singh and Sharma, 2021). Digital platforms offer resources like agricultural training programs, expert advice, and best practices that farmers can access from anywhere, leading to improved productivity and sustainable farming techniques (Hossain, 2019). But many farmers, especially from rural and remote areas, lack the necessary digital literacy and skills to effectively use digital platforms. Additionally, limited access to smartphones, internet connectivity, and electricity can make it difficult for farmers to benefit from these portals (Kher and Dhawan, 2020). There is often an overload of unverified or inaccurate information on digital platforms, which can mislead farmers and negatively impact their decision-making. Lack of regulation and quality control in the dissemination of information remains a significant issue (Das and Mishra, 2021).

5. CONCLUSION

Digital Digital portals provide knowledge of information to the users/farmer. It is very cost effective to the applicants/farmers and increases the efficiency and transparency of organization. It discourages the farmers visiting to the office for application procedure and can submit the necessary documents from their home irrespective of their geographical location. Digital portals to demand the various agricultural programs and to gain information is best platform for the farmers. As Digital portal enhances the efficiency and accessibility, it should adopt and launch by different stakeholders related to agriculture which in turn benefits both organizations and farmers too.

REFERENCES

Adhikari, S., 2023. Smart Krishi, an all-in-one app for farmers. Retrieved at: <https://kathmandupost.com/money/2023/08/05/smart-krishi-an-all-in-one-app-for-farmers>

ADO Kavre, 2023. Annual Report of Agriculture Development Office, Kavrepalanchowk, Nepal

ADO Ramechhap, 2023. Annual Report of Agriculture Development Office, Ramechhap, Nepal

Aryal, M., 2024. FAO Nepal Introduces Tele Plant Doctor: AI-Powered App

to Diagnose Plant Diseases. Retrieved at: <https://ictframe.com/fao-nepal-tele-plant-doctor-ai-powered-app-to-diagnose-plant-diseases/>

Avimanyu Palit, A., Patel, S.L., Kumar, A., and Jain, S.K., 2024. Digital Platforms and Mobile Apps in Agronomy: Connecting Farmers to Technology. Retired at: https://www.researchgate.net/publication/386423586_Digital_Platforms_and_Mobile_Apps_in_Agronomy_Connecting_Farmers_to_Technology

Bandana, P.B., Beshir, A.R., Choudhary, D., Shrestha, H.K., 2020. Seed systems in Nepal are going digital. Retrieved at: <https://www.cimmyt.org/news/seed-systems-in-nepal-are-going-digital/>

Busungu, C., Gongwe, A., Naila, D.L., and Munema, L., 2019. Complementing extension officers in technology transfer and extension services: Understanding the influence of media as change agents in modern agriculture. *Int. J. Res.*, 7 (6), Pp. 248-269.

Chaffey, D., 2015. *Digital Business and E-Commerce Management* (6th ed.). Pearson Education.

Das, A., and Mishra, R., 2021. Challenges in the Information Delivery Systems in Indian Agricultural ICT Platforms. *Information Technology for Development*, 27 (3), Pp. 595-610.

Davenport, T.H., 2013. *Analytics at Work: Smarter Decisions, Better Results*. Harvard Business Press.

Emeana, E.M., Trenchard, L., and Dehnen-Schmutz, K., 2020. The revolution of mobile phone-enabled services for agricultural development (m-Agri services) in Africa: sustainability. *Sustainability*, 12 (2), Pp. 485.

FAO, 2024. FAO Director-General visits IPM Farmers Group, attends launch of Tele Plant Doctor App. Retrieved at: <https://www.fao.org/director-general/news/details/FAO-Director-General-visits-IPM-Farmers-Group-attends-launch-of-Tele-Plant-Doctor-App/en>

Hossain, M., 2019. Agriculture and ICT: A Study of Rural Farmers' Access to Information in Bangladesh." *Asia Pacific Journal of Rural Development*, 29 (1), Pp. 15-22.

Kher, S., and Dhawan, R., 2020. Barriers to the Adoption of Digital Agriculture Platforms in India. *International Journal of Agricultural Economics*, 12 (3), Pp. 89-98.

Koufaris, M., 2002. Applying the technology acceptance model and flow theory to online consumer behavior. *Information Systems Research*, 13 (2), Pp. 205-223.

Laudon, K.C., and Laudon, J.P., 2020. *Management Information Systems: Managing the Digital Firm* (15th ed.). Pearson Education.

Opara, U.N., 2008. Agricultural information sources used by farmers in Imo State, Nigeria. *Information Development*, 24 (4), Pp. 289-295.

Singh, A.R., and Sharma, P., 2021. Role of Information and Communication Technology (ICT) in Agriculture: A Review. *International Journal of Advanced Research in Computer Science*, 12 (5), Pp. 45-50.

Singh, P., and Malhotra, P., 2019. E-Government and its Impact on Public Sector Efficiency: A Review. *International Journal of Computer Applications*, 182 (1), Pp. 36-41.

SQCC. 2020. Annual Report of Seed Quality Control Center, Hariharbhawn, Lalitpur.

