



ICT / E-Learning Readiness Analysis for Farmers in China

Min Wan, Fook Wing Chan, Qiaoqiao Zhang*,
Elizabeth Dodsworth, Philip Edge and Ying Chiang Low

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KNOWLEDGE FOR LIFE

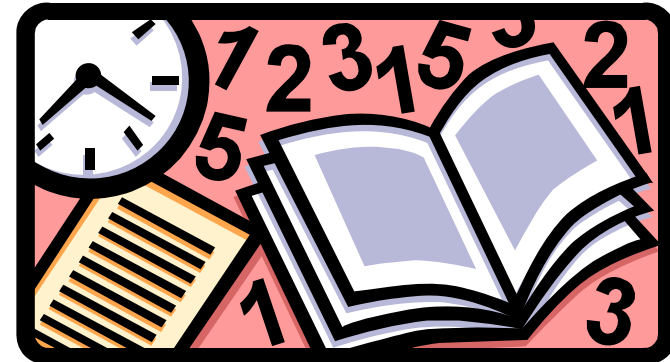
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- ICT infrastructure, facilities and connections
- Education level, and info. and skill needs in rural China
- Rural info. systems and services models
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BACKGROUND

Since 2007, CABI has conducted a situation analysis to investigate:

- the readiness of Chinese farmers' adoption of ICTs
- effective ways of transferring knowledge to rural China
- how an organization like CABI can help?

Methods: literature review, case study and survey

about CABI

- established in 1910
- owned by 45 member countries (including China)
- not-for-profit status
- staff based in 16 countries worldwide
- worked on 300 development projects in 67 countries in 2007
- publishes scientific abstracts & other products for researchers around the world – >7 million now available

our mission



CABI improves people's lives worldwide by providing information and applying scientific expertise to solve problems in Agric. and the environment

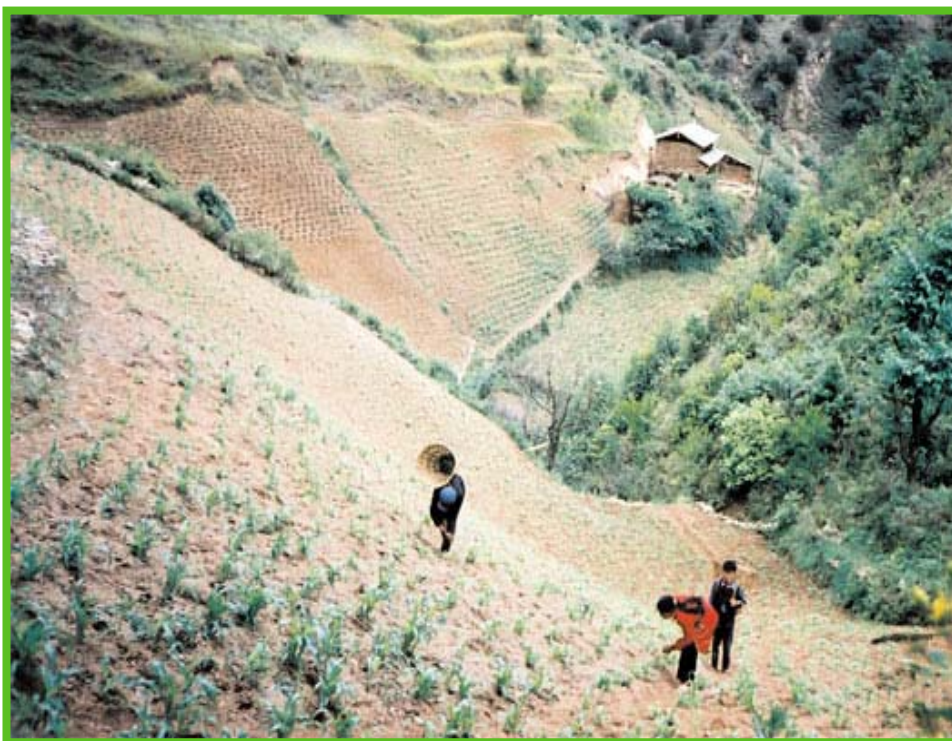


**CABI focuses on
scientific publishing and research and
communication for development**

CABI's strength in KFD/KM

- KFD activities underpinned by Publishing skills and expertise, more than one hundred years
- Manage Global programmes, Global Plant Clinic, Compendia Development
- Combination of information, publishing, research, training and project implementation
- Extensive network of partners in international research organizations, development assistance agencies, private sector, and NAROs.

GENERAL FINDINGS



Introduction

China

- One of the fastest growing economies in the world
- Rapid science, technology & ICT developments
- With less than 9% of the arable land in the world, feed 21% of the world's population
- 64% of the population (1.3b) living in rural areas (NBS, 2001)



Political and policy environment

- ‘San Nong’ (i.e. agric., rural economy and farmers’ prosperity) - high on China’s agenda
- Building of new-typed rural areas or communities’
- ‘Rural informatization’ - improving farmers’ e-learning and access to info. using ICTs & with many institutions’ participation.

ICT infrastructure, facilities and connections

Three kinds of communications networks

- radio and television networks;
- landline and mobile phone networks;
- computer networks and Internet

The coverage of all these three networks in rural China has increased greatly.



ICT infrastructure, facilities and connections

The digital divide between urban and rural areas and among different regions is still wide.

e.g. well-off Eastern China vs. less developed Western China



ICT infrastructure, facilities and connections

1. Radio and Television Networks

End 2006, the coverage rates

- Radio networks (Urban 95% Vs Rural 84%)
- Television networks (Urban 96% Vs Rural 82%)

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ICT infrastructure, facilities and connections

2. Landline and Mobile Phone Networks

- Over 540 million mobile phone users and 360 million landline phone users (end 2007).
- 99.5% of the Chinese villages can now access telephone networks incl. mobile phone networks.
- Penetration rate of mobile phone users: 41.6%
- lower in rural China

ICT infrastructure, facilities and connections

3. Computer Networks and Internet (end 2007)

- No. of PCs per 100 households: *rural 2.7 Vs urban 47.2.*
- 210 m Internet users and about 122 m broadband users, ranking top
- No. of rural Internet users increased to 53m, up 127.7% year-on-year
- Internet penetration rate: *rural 5.1% Vs urban 21.6%.*
- Farmers accounting for only 0.4% of total Internet bandwidth of the entire country

ICT infrastructure, facilities and connections



4. Mixed networks/Examples of Applications

- With **IPTV**, farmers access info. resources transferred by IP networks using a normal TV set.
- '**Farmer touch connection**' – an equipment combining functions of TV, Internet and telephone. Shanghai to extend this service to 1,800 villages in 2 years time.
- Some 20 **knowledge tools/expert systems** (handset computers) named 'Nongwutong', i.e. knowledge tools for Agric. production developed.



Education level, and Info. and skill needs in rural China

Education level:

- Overall education level in rural China improved greatly.
- On the average, Chinese farmers receive > 7 years of education.
- Computer and internet literacy, and skills among farmers generally low.



Education level, and info. needs in rural China

Info. needs:

- Farmers' info. needs increased significantly.
- Top nine needs: info. on
 - market prices of local agric. products;
 - new varieties; new technologies;
 - practical technologies; disease and pest control
 - agric. policies and preferential measures by the Government;
 - prices of agric. materials; and weather forecast.

Rural info. systems and services models

- Under the 'Golden Agric.' Programme, the "Info. Systems for Agric. Integrated Management and Services" gradually established.
- About 180, 000 rural Info. personnel in the whole country.
- At present, all the provincial level, 83% of prefectural level and 45% of county level of agric. departments have set up rural ICT service stations to provide rural info. services.

Rural info. systems and services models

- Extensive info. content & services being delivered via internet portals/websites; >6,000 agric.-related websites/portals in China (end of 2006).
- Practical, marketing & value-added info. developed & delivered through multiple media.
- Channel 7 of the China Central TV - a dedicated agric. channel showing programmes on practical technologies & knowledge.

Rural info. systems and services models

In recent years, models are based on two basic patterns:

- Government-dominated pattern
- Community-participatory pattern



Rural info. systems and services models

MoA and FAO identified three successful rural info. services models in China in 2003

- Service station model
- Farmers' home model
- Association model



Rural info. systems and services models

Models of the Government-dominated pattern:

- Gov't agency + science and technology (S&T) demonstration areas + farmers
- Gov't agency + Info. service station + farmers
- **Gov't agency + Technical Task Forces (TTF) + farmers**
- Gov't agency + rural Info. personnel + farmers

Rural info. systems and services models

Models of the Community-participatory pattern:

- “Associations + farmers”
- “Leading enterprises +associations+ farmers”
- “Agric. products wholesale markets + farmers”

Rural info. systems and services models

- Areas with different levels of economic development may adopt different models
- Gov'ts play dominant roles
- With increased global economic integration and agric. industrialization, the functions of the gov'ts may change from 'management' to 'provision of services' in some models.

Training, e-learning and technology extension for farmers

- ICT-based distance education & e-learning growing fast in China.
- A programme, namely, 'S&T Mobile Training Stations', launched & aimed at facilitating technology transfer & extension by using ICT facilities.
- A large extension system - currently undergoing significant reforms, & becoming more demand-led.

DISCUSSIONS & CONCLUDING REMARKS



Discussions & Concluding Remarks

- Wealth & digital divides exist among different regions of China and between the urban and rural areas
- Excellent opportunities for
 - the development of ICT infrastructure/facilities, internet connections, info. services, and e-learning programmes
 - preparing Chinese farmers for better ICT adoptions in rural China
- Extensiveness and diversity of rural info. users and their needs, rural info. services models/systems, and types of info. content and media in China

Discussions & Concluding Remarks

- Farmers ready & willing to embrace ICTs for accessing practical information & e-learning to certain extent
- Much progress still to be made on behalf of the farmers
- Working with local partners will ensure our efforts in knowledge transfer and info. delivery to farmers more efficient and cost effective
- We need to look into the barriers in depth
- We need to see how we can add value to the Chinese efforts

Thank you

CAB International, UK
q.zhang@cabi.org

