

Information Systems & Networks (ISN): Emphasizing Agricultural Information Networks with a case Study of AGRIS.

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Abstract: Information Systems and Networks is a kind of consortium which is dedicated to information activities ranging from information collection, selection, organization and dissemination. Information Systems and Networks are considered as important pillar for Information Transfer Cycle chain and may be established on a specific subject or discipline; or may be categorized other way. However, during some years Information Systems and Networks are also established for mission oriented purposes. The objective of this paper is to mention about information systems, its role, values and characteristics, and also describe about AGRIS; its nature, role and values in contemporary agricultural and environmental world.

Keywords: Information Systems & Networks (ISN), AGRIS, Environmental Information Systems, Information Repositories, Digital Repositories, Knowledge Network, Information Science

INTRODUCTION

Information Systems and Networks are the kind of Digital Repositories dedicated to the information and content collection, selection, organization and management for the sophisticated information delivery. ISN is the main base of today's age; due to its wonderful benefits [1, 2]. Information Systems and Networks are mainly responsible for the building of Information Society and Knowledge Economy. Apart from information and content sharing ISN's are also responsible for the sharing of hardware, software, application and packages. ISN, based on level and periphery may be classified as International, National, State or local level. Information Networks may be established for the mission or project purpose with a special intension. ISN in India, mainly established on the academic discipline and subject/s, and now a days the technology and tools are considered as main weapon for sophisticated ISN solution, now a days. ISN needs proper requirement and channels with sub system for all round development [3, 4, 2].

Information Systems and Networks

ISN or Information Systems are the type of Information Grid for information delivery, and it is also engaged in many activities for proper information and content delivery which including collection, selection, processing and proper management with the help of scientific principles and rules[5, 6, 2].

NISSAT, stand for National Information System for Science and Technology is considered as main and first Information Systems and Networks

(ISN), established in 1969 in New Delhi. Apart from these, Education and Research Network (ERNET) is another network which is also dedicated to research and development. As far as International Networks, UNISIST is considered as biggest ISN developed in Information Systems and Networks and basically work with the help of some tools and computing technologies which including Database, Information Retrieval Systems, Storage Technology, Communication Technology and Multimedia Systems.

ISN: Types

- The Information Systems and Networks may be established in various way, on the basis of periphery and reach, on the basis of subject and discipline, on the basis of tools and technologies [7, 2].
- On the basis of periphery and reach, ISN may be classified as – International Information Systems, National Information Networks and State Information Networks.
- Mission oriented Information Systems and Networks are those, which are dedicated to the particular mission aim or object like- ISN on the HIV/AIDS or Community Medicine, ISN on the Employment and placement.
- On the basis of subjects, Information Systems are also created, like NISSAT; which is a National Information Systems for Science and Technology. The main aim and objective of these type of ISN is collection, selection, organization of Information from its sub systems and disseminate with the help of scientific procedure and mechanism.

- On the basis of establishment ISN may be classified as Government Information Systems and Networks; that are mainly dedicated to the Governmental Informatics and also run and manageable by Government. Private Information Systems and Networks are basically established, managed and run by the private player and companies on various subject/ mission /objects. PPP is another joint venture based ISN working with the

support from Private Player and Governmental Agencies; these may be on any subjects/ disciplines.

- Based on tools and technologies, ISN may be established on manual ISN and techno focuses ISN. The manual ISN are basically Knowledge Organization tool dependent where as Techno focused are fully computing and Intelligent System centric.

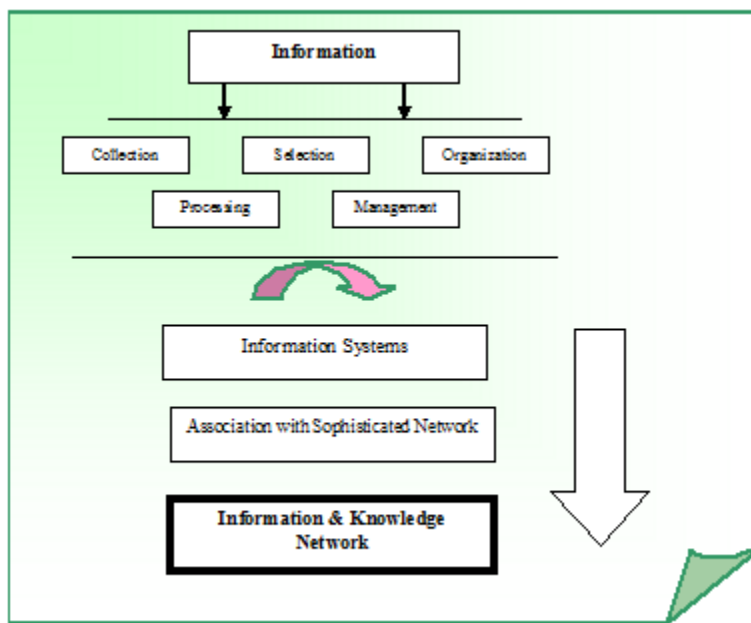


Fig: 1: The Basic Way for the Development of Knowledge Grid

Table-1: Some National & International ISN

Name of ISN	Type	Established	Field
AGRIS	Information System	1975	Agriculture & Related
ERNET	Academic Network	1986	General
NICNET	Information Network	---	General
DELNET	Information Network	1988	General
JANET	Academic Information Network	1984	Education
OCLC	Information Network	1971	General
INFONET	Information Network	2003	Education
INIS	Information System	1974	Nuclear Science
NISSAT	Information System	1977	Science & Technology
INSPECT	Information Network	1969	Physics & Engineering
MEDLARS	Information System	1964	Medical
NISCAIR	Information Centre	1964	Science & Technology
DESIDOC	Documentation Centre	1958	General
SENDOC	Documentation Centre	1970	Trade
NASSDOC	Documentation Centre	1970	Social Science

Information Systems and Networks: Challenges and Issues- Contemporary Scenario

Information Systems and Networks around the world, has so many challenges and issues that includes:-

- For ISN, we need to digitalized the content of book and research paper, so here comes the question of copyright;

- International Information Systems requires interest to build digital repository. We need to change the unwillingness;
- For huge ISN building, we need huge and handsome financial root;
- Technologies are another important area, require to build sophisticated ISN building; here it is expected that, open source software and application packages should be adequately available;
- Information Systems is now not at all a manual enterprise, these are technology dependent and information centric. So, we need proper training on IT and computing for both the users and worker or employer of the ISN;
- Strategically it is really tough to build larger Information Systems with all the facilities and of wider and broader discipline;
- Still most of the Government, are not interested to build ISN and even they are not aware about its actual benefits;
- Lack of proper planning is an important issue;
- Content generation and management is also an important issue;
- Building proper channels and correction with such ISN is really challenging.

AGRIS: International Systems for Science and Technology

AGRIS is an important name in the field of Agriculture and Environment and Animal Husbandry.. It is actually the public domain database having near about 2.6 Million structural bibliographic records in the field of Agricultural Science and Technology. AGRIS is actually connected with National Information Networks of respected field located in 65 countries and still about 150 information networks are dedicated to the Agriculture, Horticulture, Fisheries, Environmental Data, Information and full text data and book collections. AGRIS is available online through the FAO Website (<http://www.afris.fao.org>).

AGRIS: Role and Contemporary Services

AGRIS today play an important role as an International indexing and Digital Repositories with the bibliographic and full text database. Recently apart from AGRIS, some other field literature in its databases including Forestry, Aquatic Science, Human Nutrition Science, Food Technology, Horticulture and so on.

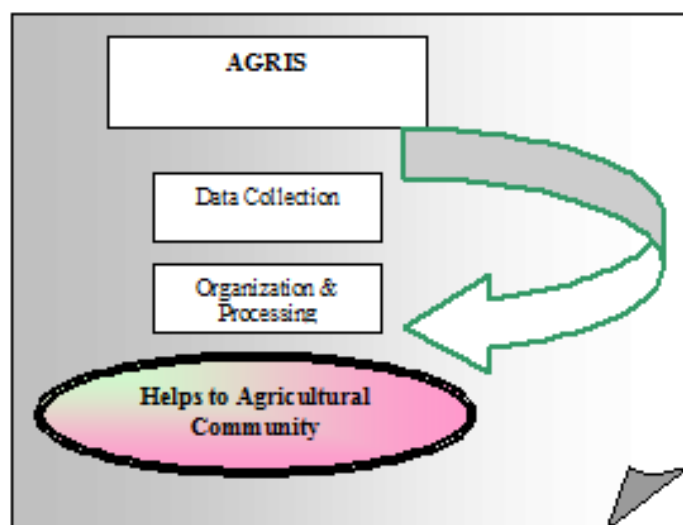


Fig: 3 The Main task of AGRIS at a glance

Now it contains grey literature as well as unpublished scientific and technical reports, thesis and conference proceedings. More interestingly still about 20% data or link provides full text through its easy open source and structured XML. Recently they are also going to include the Bibliographical data of National and International Journals of developing countries for the betterment of the concerned community. Today AGRIS is established as Digital Library and AGROVOC thesaurus. CIARD is the latest facilities of AGRIS community with new vision. Now updated online AGROC is available through its dedicated website.

AGRIS: Contemporary Challenges

- Design and development of AGRIS, still is an important challenges;
- Continuous update of indexing in all the field is really tough enough;
- The AGRIS, 'Available, Accessible and Application' is really challenging due to larger scope and periphery of Agricultural Sciences;
- Information Systems Architecture needs rigorous medication and up-dating;
- Difficult to access the original documents, due to huge data;

- Independent systems with structural and institutional constraints is an emerging issue;
- The decentralize data processing and capacity building at national level is crucial task;
- AGROVOC is a comprehensive multilingual agricultural thesaurus, so it needs several efforts.

Findings

- ISN in India and around the world, has so many potential for the social and community development;
- Building International ISN and an discipline is really tough in many ways;
- Government and departmental planning of ISN; still not sufficient;
- In India, there are not at all any ISN on Humanities and Social Science;
- Non availability of proper IT resources is an major issue.

Suggestion

- Government should implement proper ICT Planning for Development of dedicated ISN;
- Government should establish some new ISN or variety of mission and discipline like Environment and Social Sciences;
- The technological and skill requirement for the ISN should be bridged by the IT/Information Schools;
- There should be proper understanding between sub and National ISN.

CONCLUSION

Information Systems and Networks (ISN) is considered as valuable entity for sophisticated Information Transfer Cycle. Directly and indirectly ISN fulfills the Information Society and Knowledge Economy. ISN's in India particularly an academic and

subject suffering with so many problems including funding, planning, lack of interest and so on. We need to overcome these problems as soon as possible. There should be proper strategy and friendly technology for proper information management and dissemination. AGRIS and similar foundation should also engaged in Full text data base delivery and enlarge their subject scope for the all round development of Agricultural and Environmental professionals and Community

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