

The role of indigenous knowledge in Reaching to sustainable development

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Abstract: Indigenous knowledge is local knowledge that is restricted to one specific culture and/or certain society. Indigenous knowledge is different with scientific knowledge that was established by universities and scientific communities. This knowledge is basis for decision making at field of agriculture, health, education, food and natural sources. Indigenous knowledge is set of all knowledge and skills that people enjoy in one geographical area (in one environmental conditions) that most of their skills and knowledge be transmitted to next generation, and new generation would be adapted with them and add to it. Since, each knowledge is consequent of individual interaction with environment, so indigenous knowledge is consequent of indigenous people interaction with their environment. Chambers with emphasis on people's role at development process believes that "rural people's knowledge" term is more eloquent than other terms for indigenous knowledge. Our purpose of rural people are producer farmers, input buyers, agriculture production sellers and etc. "people" in above phrase emphasis that this knowledge is more verbal and less has been written. This word also referred to whole knowledge system which contains concepts, beliefs, and attitudes and also contains gain, store and transmitting knowledge process.

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Introduction:

In recently years, from Renaissance till now, as much as human had developed, they also had contradictions and collisions in their world (Azkia and imani, 2008). One of these contradictions is the contrast between tradition and modernism. Maybe we can find these contrast roots in colonial era, the time when colonists promote their innovation in their colonies. Mostly these techniques and innovations show their Indigenous knowledge and the way of their living is foolish and inefficient and tried to enter industrial ways in to their life to increase production efficiency through this way. Thus the way of their living which was been formed during thousands of years has gone to be forgotten little by little (Bouzarjmehri, 2004). We can say, agriculture part is bearing the most damage in this rapid industrialization process. Absolving old and compatible ways in agriculture part and replacing and using of implant, harvest patterns without any proportions with environment has caused decrease of production efficiency, soil erosion and hard destruction of environment during a long time. Finally, at the end of the 20th century decades, some solutions were suggested to solve these inconsistencies and problems. So the importance of Indigenous knowledge and effort in compilation of that with modern knowledge were considered and it was tried to make general and stable view in relation with environment and the way of living through this way (popzan, 2002).

By first of 21 century, world see some sings of great concerns about social, economic and environmental system sets. It is expected that world population reach to 8 billion people at 2025. Increased consumption and poverty have led to high pressure on environment. At so many areas, environment condition is more fragile than before. We have faced decay at environmental issues, especially at vast parts of developing areas of world, in spite of considerable improvement of rivers conditions and air quality at some area such as Europe and north of America. Increased consumption, rare sources and factors such as population growth and imbalanced growth, would endanger, development of different countries (Popzan, 2002). Obviously, economic development can follow unexpected social and environmental affections involving weather changes, using freshwater sources inordinately, decrease living diversity and increase inequality (Gigler, 2003). Sustainable development is outcome of development that follow multi dimensional economic activities with protect environment and its related social issues. So in current decade, presenting indigenous knowledge issue was reinforced in order to present modern approach of development, in which the issue of human-oriented of development would be insisted. In this modern attitude toward development process, environmental, social and cultural concerns were emphasized over economic interests. Indigenous knowledge is part of national capital of each nation which encompasses their beliefs, values, practices,

tools and local acknowledges. This is the same knowledge that , different nations had found their foods from nature , prepared their clothing , settled in home , educated their children , organized their society and kept health of themselves and poultries , during the centuries thereby(Eshraghi, 2004) .

Many experts believe that for making a sustainable development, Indigenous and modern knowledge should be combined. Nowadays, so much efforts have done to make use of Indigenous knowledge but main part of these efforts were done for derivation and making it scientific (Burger, 1997).

Amiri Ardakani and Shah vali (2003) believe that the undesirable outcomes of development on people and rural environment is the result of using new science by scientist, so by blending and making relation between modern and Indigenous knowledge we can solve this problem.

Millar believe that by combining Indigenous and modern knowledge we can make trust between researchers and rural people, because by using this way researchers and rural people know themselves as a partner that are responsible for a common process and product. Millar believe that the trust is the reason for future development (Penny, 2001).

Experts believe that there is no way to reach sustainable development except to combine Indigenous and modern knowledge.

Indigenous and modern knowledge will complicate when:

- 1- We solve structural barriers such as political, economical, cultural and social difficulties.
- 2- We correct the thoughts on educational systems by emphasizing on learning and thought process and also correct the thoughts on research systems by emphasizing on audience and beneficiaries needs.
- 3- We solve communication barriers that cause inactivity on relation process and steady and dynamic flow of knowledge between peasants, experts and scholars. (Emadi and Amiri Ardakani. 2004).

Sustainability and sustainable development:

Sustainability is meaning to make economic, social and environment's views in harmony with our constant needs. Sustainability includes widespread and comprehensive points and is depended on interference in social issues. It is concentrated on future and today's issues and is a world movement and in harmony with our authorities (Kolawopole, 2001).

The correct concept of Sustainability has followed a certainly and warranty of life satisfaction quality for

everybody. Of course for reaching to this constancy, it is not enough to decrease pollutant activities or prevent of increasing levels of consumption, but also we should make a suitable schematization for decreasing poverty and making activity for reaching to equanimity and improvement of chances in and out of countries. Sustainability had implication on steady and sustainable conditions. Steady condition encompasses distant horizons (Dewes, 1998).

The concept of sustainable development is a complicated concept that is explained by different people in different ways. From international viewpoint, the more famous definition of sustainable development is obtained through 1978 reports by Brandt land commission with this title" our common future" that is defined as fallow: sustainable development is a development that contain our modern needs without making any problems in providing future generation's needs.

Sustainable development recognize that social, economic and environmental results are related to each other and they should be equally in harmony for making decisions process. Decisions which are based on Sustainability will help future generation in reaching to a well environment and success economic (Box, 1999).

infrastructural information in sustainable development:

Ideal and infrastructural information in sustainable development consist of:

- 1- Environment and economic integration: economic decisions should be made according to their effect on environment.
- 2- Making guarantee between generations: decisions should be made according to their effect on future generation's environment
- 3- Social justice: all the people have this right to have an environment to grow on it and be successful
- 4- Environmental protection: it is needed to protect of natural sources and support plants and animals.
- 5- Quality of life: a widespread definition of human welfare should be given which is more important than economic welfare.

Reaching to sustainable development through Indigenous knowledge:

Dictated pattern's failure through western development countries to third world countries show that Indigenous knowledge is necessary to reach development.

Untrop believe that usage of local knowledge is efficient and useful in development and Indigenous knowledge's researchers believe that they achieved to

an important source for innovation in agriculture methods and a good farming production to improve the rural people's life. On his idea, some of researchers call Indigenous knowledge as a good supplement and replacement for modern knowledge and they have tried to spread the usage of this knowledge all around the world. These plans as a "communion research with farmers" or "first is the first" are introduced. In this research method, private organs and local groups have the main role and unlink the current research plans, the tests are done with the farmers attendance in their farms and not in research centers and far from environment condition. The ways that farmers and rural people use for management of their living environment are the most scientific ways, although we couldn't understand it at the first sight (Chambers, 2000).

Eshraghi (2000) explained that by introducing sustainable development model or development environmental model and according to world food organization (FAO), sustainable development will create when applied technologies in rural development are in proportion with rural people's knowledge and also are acceptable by them. Also he says that one the main ways to reach sustainable development in society is that to have enough and necessary attention to the rural's Indigenous or local knowledge (Merrewij, 1998). It is also explained that attention to this knowledge needs a complete recognition of rural people and their knowledge that through assembling of this knowledge we can find a correct way to reach a sustainable development and we should know that the movement toward sustainable development is not possible without correct using of Indigenous knowledge. Many development experts believe that the Sustainability of this concept is at the studying of this knowledge and in becoming popular in development. Indeed, Indigenous knowledge with its holist features had known the relation between nature's components better and had smoothed the way to Sustainability of development (Gigler, 2003).

We can summarize the usage of Indigenous knowledge in development as fallow:

- 1- Protection and maintenance of natural sources. Indigenous methods in management of natural sources are suitable pattern for managing natural sources in sustainable development.
- 2- The success of sustainable development plans is depended to rural people's communion at designing, schematization, performance and assessment. Use of Indigenous knowledge is necessary for rural people's communion.

- 3- Indigenous and modern knowledge should be combined because according to our needs and vulnerability of remained natural sources, none of them are able to remove our needs a lonely.
- 4- For recognizing development needs, trouble shooting problems should be polestar from rural people's view and recognizing problems and making efficient relation with rural people are possible through Indigenous knowledge.
- 5- In industrial countries, Indigenous methods are forgotten completely because of using modern knowledge in production process. As Indigenous methods are the most suitable way for achieving sustainable development goals so, many efforts were done to make this knowledge alive.

As a result not only we shouldn't forget the Indigenous knowledge but also we should use of this knowledge in developmental plans. Using Indigenous knowledge in developmental projects will help to have sustainable development in villages. So developing and not developing that were using of western development patterns for many year, should use of their Indigenous and local knowledge which is the result of many years experience and by helping these plans they can reach to a sustainable development(Brouwer, 1998).

Sustainable agriculture

Sustainable agriculture is kind of agriculture that is toward human's interests and has more efficiency of using resources, and also is in balance with environment. This definition is in harmony with changing social and politic factors at agriculture development .and also it referred to kind of agriculture that is enable to produce enough foods without destroying world sources or polluting environment. It is also kind of agriculture that is follow with social values, agriculture family's welfare and supplying needed foods.

Generally sustainable agriculture is every kind of production system which follows theses goals:

More complete mixing of natural processes such as food cycles, nitrogen fixation, and relation of pests and natural disasters with agriculture productions processes.

Decreasing use of that non-farming, outside and non-renewable inputs in order to reduce damage to environment or less damage to farmers and consumer's health.

More fair access to interests and productions opportunities and progress in order to access to forms of agriculture that is fairer, and also increasing self

reliance between farmers and villagers (Chambers, 2000).

Using more potential biologic and genetic aptitude of plant and animal species.

Using more local knowledge including innovative approaches that scholars didn't understand it completely or farmers didn't accept it extensively.

Combined agriculture would prepare this opportunity for common systems to apply needed reforms without creating inclusive changes in it toward organic systems. Therefore, aforementioned systems are considered as medium between common intensive agriculture and organic agriculture methods.

Two principles have especial importance at sustainable agriculture that is:

at early 1980's, with the emergence of new concepts, renewable agriculture and sustainable agriculture evolved and indeed it was based on "ecological interplay affect". Now, this concept forms alter indigenous agriculture philosophy.

Sustainable agriculture presented from 1987 at global scale. In this principle, "agricultural interplay affects with society" is presented. Three issues are important about sustainability: first is enough income especially between poor people. Second is increasing access opportunity to food and its consumption. This means that more food should be prepared through increasing production and improving marketing. Third issue contains protecting and improving natural resources (Louise, 2000).

Conclusion:

Indigenous knowledge has been manifested at sustainable process and improving extension programs at industrial countries of world, very well. Indigenous knowledge related to agriculture, medicine, food and architecture has been widely used At European countries, USA, Canada, Australia, by new names.

At one research as a name of "analyzing position of indigenous knowledge at sustainable rural development" that was done by Buzarjomhore (2005) it was signified that although there are some differences between indigenous and formal knowledge, but they should not be compared, because they are complementary of each other and it is possible to gain successes by synthesizing them that is impossible lonely. Base on new paradigms of rural development in order to solve rural problems, we should first refer to indigenous solutions and if it was working, then we should reinforce it; if not we should test and use outside solutions. Findings of one research done by Emadi and Amiri (2004), as "Synthesizing indigenous knowledge and formal knowledge as necessity for accessing to sustainable rural development", has shown that dominated belief

among educated groups toward Indigenous and their knowledge is precondition of every interaction, synthesis and relation. Creating revolution in formal education systems in order to attending empirical knowledge area is considered as one of main necessity of this synthesis that is outcome of years of researches. Researchers attention to "exploiter's accumulated experimental and historical wisdom" is one of other necessities of this revolution by using cooperative, qualitative and filed methods. Also, applying mutual extension ways and creating revolution at communication system between governmental, education-extension centers and farmers and rural people so that they be interacting, was considered as precondition and necessities. At researches as "indigenous knowledge at development process" done by Karimi (2003), findings show that indigenous knowledge is principal factor and main source at the field of research of sustainable development, decreasing poverty, enabling local men and attracting their participation at activities and rural development programs, developing and producing appropriate technology, self-reliance of rural societies and country.

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References:

1. Eshraghi, G, Indigenous Knowledge and Development Planning, Journal of Forest and Rangeland, No. 40, Forest, Rangeland and Watershed country, 2000.
2. Amiri Ardekani, M. and Shahvali, M. Principles, concepts and indigenous knowledge Agriculture "series of publications and development of villages No. 34, Second Edition 2003.
3. Bouzarjmehri, Kh. indigenous farming knowledge of gender and its role in Rural Development and Research, Centre of Quarterly Tehran University Women (Women's Research), 2004.
4. Popzan, A. Design and compilation of indigenous knowledge, modern media in order to achieve a partnership approach in Kermanshah province - end of period letter PhD Tehran University Faculty of Agriculture to help Azkia and Seyed Mahmoud Hosseini. 2002.
5. Chambers, Robert - rural development, priority part to the poor (supporting vulnerable groups),

- translated by Mustafa Azkia, Tehran University Press, 2000.
6. Farrokhi, S and Yaghoubi, J. technology development through indigenous knowledge systems with agricultural research - Journal of Jihad, No. 224-225, 2002.
 7. Zare, H and Yaghoubi, J. attitude to the indigenous knowledge - Journal of jihad, No. 231-230, 2003.
 8. Razavi, M. Agriculture and natural resources, indigenous knowledge and combining it with modern knowledge, Jihad magazine, twenty-five years, No. 269, 1999.
 9. Emadi, M and Amiri Ardekani, M. - combining indigenous knowledge and formal knowledge, necessary to achieve sustainable development of Agriculture - Rural Development Publication No. 54, 2004.
 10. Emadi, M and Abbasi, E. indigenous knowledge and sustainable development of villages, the old view of a new zone, and development of village's No. 33, 2001.
 11. Karami, R and Moradi, Kh. The place of research, training and promoting the preservation of indigenous knowledge, Journal of Jihad, No. 255, 2003.
 12. Nowroozi, A and Alagha, E. a new category of indigenous knowledge in rural development research - Journal of jihad, No. 223-222, 2000.
 13. Brouwer, Jan. (1998). IK, IKS and ITK. Indigenous knowledge and Development Monitor. Vol.6, Issue 3, p, 13.
 14. Gigler, S, et al. (2003). ICT for Indigenous Development. Available at: [http:// topics.Developmentgateway.org/ ict/ sdm/ preview](http://topics.Developmentgateway.org/ict/sdm/preview) Document. Do ~ active Document Id 2003.
 15. Merrewij , A. v. (1998). Three definitions of indigenous knowledge. Indigenous knowledge and Development Monitor. Vol.6, Issue 3, p, 13.
 16. Box, L. (1999), for the fun of it, Guest Column, Indigenous knowledge and Development Monitor 792; 36.
 17. Kolawople, D. (2001), Local Knowledge Utilization and Sustainable rural development in the 21 St. Centuries, IK Monitor Article (9-1).
 18. Dewes, w. (1998), Introduction, p. 3in traditional knowledge and sustainable in S. H. Davis and K. Ebbe (Eds) Proceedings of a conference held at the World Bank Washington, D.C, sept. 27-28. Environmentally Sustainable proceeding series No. 4.
 19. Louise, G (2000), Working with indigenous knowledge (A guide for researchers), published by the International Development research Centre, po Box 8500 Ottawa. On, Canada K1G 3H9.
 20. Penny R. A (2001), Gender and Indigenous Knowledge, IK&D M, Article (9-1).
 21. Rajasekaran, B.D.D. M. Warren and S.C. Babu (1996), Indigenous natural-resource management system for sustainable agricultural development- a global perspective Journal of International Development 3 (4).
 22. Warren, D. M. (1999) "The role of indigenous Knowledge and biotechnology in sustainable agricultural development" A Keynote Address presented at Southwestern Nigerian Regional Workshop on indigenous knowledge and Biotechnology, Obafemi Awolowo university, Ie- Ife, OsunState, Nigeria 30 July.
 23. Agrawal. A ,(2002) "Dismantling the Drivide between Indigenous and scientific knowledge "Development and change vol 26.No3.
 24. Ahmed, M. 2000 .Indigenous Knowledge for Sustainable Development in the Sudan . Khartoum, Sudan. Khartoum University Press.
 25. Appleton, H., Jeans, and A. 1995" Technology from the People: Technology Transfer and Indigenous Knowledge ."Science, Technology and Development.

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