

Build Synergy Between Local And Modern Knowledge In Developing Beef Cattle

A.Amidah Amrawaty, M. Saleh S. Ali, Nurdiah Husnah

Abstract: The successful of farm development relies heavily on science and technology adoption by cattlemen society. Indonesia as a developing country has absorbed technologies from developed countries, some showed good results but some others less complies with the existing conditions. Technology transfer from developed countries to developing countries could hamper development. The importance of indigenous technology expressed that only one thing could help efforts to increase the income of farmers with an understanding of local knowledge systems and the structure of the existing institutions. Therefore, to develop animal resources and in particular sustainable beef cattle farm, a synergy need to be built between local knowledge of farmer communities which already applied and blends in with the local culture and modern knowledge generated through research, actualized in concept of sustainable animal husbandry development acting very dominant for sustainability, well-being, social, and creativity. Local knowledge is possible for synergy with modern knowledge which has become the main knowledge in agricultural development today. Synergizing both of these knowledges needs a precondition of mutual respect among owners of these the stocks of knowledge. Experts or owners of modern knowledge must admit and cherish local knowledge owners and vice versa, owners of local knowledge should also appreciate the modern one. Without esteem from both knowledge owners it is impossible to synergize both of this knowledge.

Index Terms: synergy, local knowledge, modern knowledge, beef cattle

1 INTRODUCTION

The successful of farm development relies heavily on science and technology adoption by cattlemen society. Indonesia as a developing country has absorbed technologies from developed countries, some showed good results but some others less complies with the existing conditions. Titilola (1990)[1], has reminded that technology transfer from developed countries to a developing one could hamper the development of local technologies and create dependency. In this matter, the program of technological innovation development must comply with specific constraints found in local environment and social condition. Technological application which is not comply with farmer's social condition and focuses only onecological factor will destroy the environment (De Walt, 1994)[2]. On the other hand, in cattlemen society there is original technology or indigenous technology (IT) as property of the society which has been applied and integrated to the local culture (Warren, (1993)[3], and Ayana and Beyene. 2003 [4].

The importance of indigenous technology has been suggested by Titilola (1990)[1], who said that only one matter could assist efforts of cattlemen's welfare improvement, that is, understanding local knowledge system and its existing institutional structure. Indigenous technology developed through repeatedly experiences and experiments conducted by society according to its capability. Indigenous technology can be easily applied because of its relatively low input, small risk and friendly to the environment, while modern technology generally use high input, big risk and often not friendly to the environment (De Walt, 1994)[2]. Knowledge and local wisdom start to get attention when an awareness emerged that modernization process which suggested that "all traditional thing was bad and therefore must be changed through modernization which has all the goodness for society is misguided. Human's outlook about its cosmos must be sterile from mystique, myth and magical things and changed with sensible and rational things, especially technology and science, given on to fact that the technology and science in the reality transform to become myth, mystique and magical itself. Practically, this awareness was also pushed by the fact that it is impossible to eliminate traditional technology in the swift currents of modernization. Integration between modern and traditional life, between outlook characterized by mystique, myth and magical things and the one characterized by logic-empirical and rationality is considered more appropriate and realistic in life system (Salman, 2006)[5] because it has been studied for generations and appropriate for sustainable environmental management (Hijang and Basrah, 2007)[6]. Introduced technologies from many researches have been socialized, tested and prompted through agricultural development programs in Indonesia. All programs introduce technology which could increase production and farmer's income. The technology introduced have passed examination in laboratory, experimental farm or at farmer's ranch (on-farm research) and be analyzed for its economic feasibility. In fact, according to De Walt (1994)[2], many introduced technologies have not yet been adopted by farmer on an ongoing basis. This fact generate a kind of gap between limitation of farmer's ability and requirement of high input of the introduced technology. This matter hampers the adoption process of technology resulted from any research. Kloppenburg (1991) in Ali (2000)[7] suggested that modern

- A.Amidah Amrawaty: Graduate School, Hasanuddin University, Makassar, 90245 South Sulawesi, Indonesia E-mail: amidahmurad@yahoo.co.id
- M. Saleh S. Ali: Department of Agricultural Socio-Economics, Faculty of Agriculture, Hasanuddin University, Makassar, 90245 South Sulawesi, Indonesia. E-mail: salehali900@yahoo.com
- Nurdiah Husnah Graduate School, Hasanuddin University, Makassar, 90245 South Sulawesi, Indonesia, E-mail: nurdiahhusnah@yahoo.com
- is currently pursuing masters degree program in electric power engineering in University, Country, PH-01123456789. E-mail: author_name@mail.com
- Co-Author name is currently pursuing masters degree program in electric power engineering in University, Country, PH-01123456789. E-mail: author_name@mail.com
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technology or modern knowledge must be exploited and in synergy with local knowledge which is an important asset in developing sustainable agriculture, because basically both knowledge is complementary. In this time traditional knowledge is considered of vital importance above altogether in discussions concerning usage of sustainable resources and proportional development (Agrawal, 1995)[8]. Here in after Daulay (2011)[9] said that traditional knowledge also is of vital importance to long term food security and agriculture system. Therefore for the development of livestock resources especially development of sustainable cattle ranch, a synergy between local knowledge applied by and integrated in cattlemen society and modern technology resulted from any research is needed to be developed for actualized in sustainable livestock development concept which play an important role for improvement of sustainability, prosperity, sociality, and creativity.

2. DEVELOP SINERGY BETWEEN LOCAL KNOWLEDGE AND MODERN KNOWLEDGE

Knowledge and local wisdom start to get attention when an awareness emerged that modernization process which suggested that "all traditional thing was bad and therefore must be changed through modernization which has all the goodness for society is misguided. Human's outlook about its cosmos must be sterile from mystique, myth and magical things and changed with sensible and rational things, especially technology and science, given on to fact that the technology and science in the reality transform to become myth, mystique and magical itself. Practically, this awareness was also pushed by the fact that it is impossible to eliminate traditional technology in the swift currents of modernization. Integration between modern and traditional life, between outlook characterized by mystique, myth and magical things and the one characterized by logic-empirical and rationality is considered more appropriate and realistic in life system (Salman, 2006) [5] because it has been studied for generations and appropriate for sustainable environmental management (Hajjang and Basrah, 2007)[6]. A study in Nepal elaborated system approach to compare traditional and scientific knowledge and see consistency and discriminative power of laboratory assessment on traditional cattlemen. This research provided bases for evaluation of compatibility and complementary trait between traditional and scientific knowledge regarding tree fodder. Its result indicate that laboratory assessment (scientific knowledge) of quality of tropical tree fodder can be used to form and improve traditional classification nor replacing it (Walker et al., 1999)[10] Many researches have been conducted about local knowledge in animal husbandry area. Ratnada et al. (2004)[11] reported that local culture, in many matter have given guidance to society, included in agriculture area such as integration system of crop-livestock which its elementary knowledge have grown on in farmer culture. In same area of research, Sudaratmaja et al.(2004)[12] indicated that existing local wisdom in Balinese culture sourced from Weda viewed cattle, crop or land, farmer and technology as "mother" respected for its contribution. This means Weda and local wisdom since long time ago have indicated of importance of crop – livestock integration system. Even if actualized in sustainable development concept, the four "mothers" also plays dominant role in the context of integration system, concerning continuity aspect, prosperity, sociality, and

creativity A Research about role of traditional knowledge in Papua reported that pig livestock in Papua and buffalo in Sumatra represent appliance of towing a plow and farmer's saving. Initially functioned as ultimate power in towing rice field, the animals are now become less paid attention anymore. This matter caused population decrease of the livestock. The effect here in after is the decrease of cheap manure and other products from the animals which could improve welfare and become an investment resource to farmers (Adimihardja, 1999)[13] A Study conducted by Mashur et al. (2004)[14] concerning role of communal institute custom in pasturing of livestock reported that in institute of communal cage, custom or tribe is being motivated, giving legitimation, and uphold norms or order going into effect. For example, cooling down the cattle in order to get a healthy, safety and good cattle. In the society, this manner knows as HAINIK. In addition, custom or tribe play important role in decision making if the norms are violated. A Survey conducted by Angassa and Beyone (2003)[15] in Borana regarding range (pasture field) condition in South Ethiopia reported that traditional pasturing practice, though effective for sustainable usage of resources, becoming very marginalized because urged by growth of ranch, communal grassland allocation for the investor of private sector, cultivation and personally rented grassland area. Improvement of livestock population and degradation of pasturing field, have lessened the effectiveness of traditional management to prevent losing of livestock in dry season causing bad impact to cattlemen. This survey recommended participative planning and development intervention strategy base on traditional knowledge and values suggested for the development and usage sustainable resources. Case study in hinterland of Trans Himalaya, India (Chandrasekara, et al., 2007) [16] which evaluating traditional ranch ecology implication and usage of land practices farm explained that requirement to maintain the diversity of livestock at traditional pasturing system come from dependency of local resident to various livestock product types. Of ecology facet, pasturing of immeasurable livestock (traditional) tend to more sustainable if density of stock is low and every livestock type use different habitat. Research conducted by Davis, Diana. (1996)[17] explored how practice and knowledge of veterinary influenced the usage of pasturing field resources in Marocco. This Study reported that all pastoralist in region of Aarib, Maroccoact with rational way and apply local livestock management which is very fit with their stochastic and dry environment. Local knowledge is generally described as pastromantism, and is often consider as constraint in country development. Nyangren (1999)[18] said that from development expert's point of view, local knowledge is assumed as constraint for development and local resident's life limited by their traditional idea. According to Sillitoe (1998)[19], local knowledge represents practical knowledge of society obtained hereditarily from their ancestors and based on experience and study of natural phenomenon coherent in their socio-cultural life. Local knowledge has specific character in terms of culture, location of geography, and often cover particular ecosystem region. Therefore, in response to development and environmental crisis, local knowledge have limitation in solving global issues and environmental issue or development issue at different society or location. Local knowledge is very rarely taken into account in its contention with science. Local society will integrate and reinterpret knowledge aspects and modern practices into their tradition as

part of globalization process which underway. Through quick changes in a long term this local knowledge system will experience modification process towards scientific perspective. According to Escobar (1999)[20], local knowledge in its politics contention with capitalist interests and scientists will perform a hybrid through cultural hybridization process. In another word, each party owning culture of thought basis and different interests finally will perform one political regime toward unity of political view nature. In consequence, according to Forsyth (2004)[21], the concept of hybridization between local knowledge and science represent integration of both in order to find explanation locally related to environmental problems. The aim of this hybridization is not to reveal biophysical changes completely, but to know how far hegemonic discourse of environmental problems in accordance with the experience of people in certain region. Related to applying science into social system of the society owned local knowledge, Rogers (2003)[22] in his adoption model suggested some nature of innovation having an influence on acceptance of the innovation itself, for example relative advantages, compatibility, complexity, possibility to apply, and perceived possibility (observability). Compatibility among innovations closely related to local knowledge. If an innovation is in appropriate and contrary to the norms and local knowledge system, then local society will have difficulty to accept it. For example that scientific knowledge still require to be allied with local knowledge can be seen in a case at North Lampung where relation between "cool" land and fertilization effort at fallow land is performed. Farmer describes the fertile land as "cool" land characterized by black color, moist, granule and easy to be plowed and unfertile land as "hot" land characterized by white color, dry and hard to be plowed. On the other hand, soil researcher relates soil fertility with nature of the soil which could be measured, but none of the measured traits could describe the simple local term appropriately. Base on scientific diagnosis, degradation of soil fertility in North Lampung was caused by cultivation of annual crop continuously resulting in imbalance between the amount of nutrient returned into soil and carried out from the land (Sumaryo and Joshi, 2003)[23]. Be aware that the knowledge of farmers , as well as scientific knowledge , is still not perfect and dynamic , and constantly changing due to the influence of internal and external factors . Farmer knowledge can be complex , qualitative, logical though sometimes contradictory . In connection with this local knowledge, the expected role of scientists is how to streng then the knowledge of farmers to produce knowledge that can not be produced by the farmers themselves. In fact have a lot of knowledge and technology that has been developed in the community, but because of the limitations of the local knowledge of scientific research is still needed. In addition, because of the limited ability of testing and communication between farmers, they are often late in anticipation of changes in the quality of resources and the environment is rapid. Indigenous knowledge is a complement (complement) is important for the formal scientific knowledge. As stated by Grandstaff and Grandstaff (1986) [24]based on his experiences in Thailand, the farmers did not have the scientific knowledge to predict what might happen, but no one will be able to better understand their local conditions other than their own.

CONCLUSION

1. The strength of local knowledge lies in the knowledge of the aspects that is easy to understand and use because it grows and develops in the community. This knowledge is very pro - environment and even a lot of substance departing from environmental knowledge. Instead, this knowledge is loaded with flaws. Judging from the scientific method, knowledge building is formed not through the usual process of the scientific method as practiced in modern knowledge building, the consequences are very difficult to verify and falsifiable.
2. Regardless of the strengths and weaknesses of the local knowledge, the knowledge that it is possible to be synergized with the knowledge of modern science major (main knowlgedge) in today's agricultural development. To synergize these two knowledge necessary prerequisite of mutual respect among the "owners" of the two stock knowledge. The experts or the "owner" of modern science must recognize and respect local knowledge, and instead of the "owners" of local knowledge should also appreciate modern knowledge. Without the appreciation of both the "owner" of knowledge, it is impossible to synergize both the knowledge.

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