

HISTORY AND EXPERIENCES OF AGRICULTURAL EXTENSION IN INDONESIA **)

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Introduction

Extension was born in Britain in mid nineteenth century. University extension appeared in the country. In 1850, discussions were held in Oxford and Cambridge universities on how to provide service to meet education needs around neighborhood, particularly due to fast population growth in industrial and urban area. The lecturers gave teaching on social topics, but in 1890s agricultural topics were included in learning material for rural people. Success of extension activity in Britain affected development of similar activity in various countries particularly in United States. For two early decades of the century, activity of Land Grant College in United States in farming household service grew fast and organized formally. However, uses of term extension continued (Jones and Garforth in Swanson et al, 1997).

Since the twentieth century, agricultural extension started to use commonly in United States to indicate that target of teaching in university not only limited in campus environment, but also extended to all parties living in any environment. Agricultural extension activity more developed due to disease of potato blight in Europe in 1845. In Ireland there were many potato deaths, and potato famine until 1851.

Extension can be viewed as a form of education for adult (andragogy) (Knowles, 1980). In Dutch, there is term "*voorlichting*" means providing information to help someone finding solution. Indonesia follow Dutch to use word "*penyuluhan*" coming from word "*suluh*" or "*obor*" function to give illumination in dark (Anonim, 2001). Ferver and Leagans stated that extension is applied science. Ferver gave definition that extension is applied science that particularly study theories, procedures, and ways usable to convey new technology found from agricultural research and social research to society through education process, so they understand, accept and use them to solve their problems (Nuraini, 1977;

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Prodjosoehardjo, 1979). Cruz of FAO formulate that agricultural extension in essence is adult education to give direction and persuasion to farmer in order to adopt the best practice for agricultural and farm business that then change mentality and initiative to improve practice and knowledge. Padmanegara define agricultural as non formal education system for farmer and their family to make them willing and capable of, and are autonomous in improving their welfare and society (Anonym, 2001). In the Law No.16/2006 on Agricultural, Fishery, and Forestry Extension System, agricultural extension is a learning process for main agents and business communities to make them ready and capable of helping and organizing themselves in accessing market information, technology, capital and other resources in a bid to drive up productivity, business efficiency, income and welfare as well as raise awareness of conservation of environment functions. Therefore, definition of extension is very different from "*penerangan*", because "*penerangan*" only mean to inform. From various definitions, agricultural extension may be viewed as an applied science and an education or learning process for adult or farmer to be able to help them.

Applied science and extension philosophy

As a science, agricultural extension is interdisciplinary applied science that study society/farmer. So, extension science has relationship with other disciplines that also study society/farmer, such as communication, psychology, sociology, anthropology. According to Peursen (1985), applied science tries to transform accidental events in its system to be applicable relation network, so it is absolute. Experiment or research to formulate theory should function as application. Applied science enters society deeper; practical work goal is part of theory. Object of extension is society, particularly related to agriculture in term of behavior in order to help them through education process. Research method and technique use quantitative and qualitative approach, or combined qualitative and quantitative approach.

Development of extension science is not separated from development of research from various sciences, such as innovation diffusion in extension, developed from Anthropology research by Wissler (1923) and Wellin (1955), rural sociology research by Ryan & Gross (1943), educational research by Paul Mort (1920), communication research by Shannon & Weaver (1949). There also occur for Roger's innovation adoption process theory, which is then enriched by application theory through imitation such as Bandura (1977)'s social learning. Through epistemology done by previous experts, resulted works enrich extension theory as science and deepen analysis to solve problems farmers and society face.

In its implementation, extension as educational or learning process has values and ideal base known as extension philosophy. The agricultural extension philosophy is collection of values underlying certain programs or objectives. Philosophy includes ideal base and basic approach that will be done, as thinking base used to do activities. Agricultural extension philosophy in Britain as extension, presented by Harold Dusenberry (in Nuraini, 1977), based on three matters: Intelligent, Capable, and Desire. The philosophy means that (1) extension should be based on assumption that farmer has intelligence, wits, enough mind to accept innovation, (2) extension should be based on assumption that farmer have capability and capable of doing something and (3) extension is based on assumption that farmers have desire to get information/innovation and use it to improve their business. Agricultural extension philosophy in united states is called as 3T, formulated by Mosher (Mosher, 1978) as true, truth, and Teach that means, material provided should be true according to reason and obtained from research, the material should be real that can be applied and extension agents are sure to apply in the location, and material dissemination is done by educational process.

In Indonesia, Pancasila is foundation of extension, but some have opinion that it is too broad, so philosophy of extension is identical to philosophy of education. Extension is also a educational process, so Ki Hadjar Dewantoro/Taman Siswa's educational philosophy may be used for extension: *Ing ngarso sung tulodho, ing madyo mbangun karso, tut wuri handayani* that mean extension workers when in front of farmer should give example, in middle they should give initiative and spirit to work, and in behind should observe/accompany to improve mistake. Indonesia Agricultural Ministry tend to follow Britain's extension philosophy (Nuraini, 1977), that assume that farmers have intelligence, capability, and desire to improve their business/life. Based on the philosophy, if they face difficulty and problem in extension or even failure, the failure should not be said as "farmer idiocy", but it should be placed on extension agents to introspect their selves and looking for solution.

History of agricultural extension in Indonesia

In Indonesia, history of agricultural extension was not separated from history of agricultural development. The history of agricultural development was begun with establishment of the Great Garden of Bogor in May 17, 1817 by CGL. Reinwardt. From the Great Garden, some new plants were introduced such as oil palm and 50 species of cassava. In 1831, Dutch cultivation system was begun for indigo, coffee, sugar, and tobacco. In the cultivation system era, Governor Daendels ordered improvements of various plants, particularly paddy. At the time, *Pangreh Praja* was the only agency that had authority to do direct relation/extension to people (Anonym, 2001).

Prof. Iso Reksohadiprojo (professor of agricultural socio economics, Gadjah Mada University) (Anonym, 2010) classify some periods of agricultural

extension history in Indonesia from Dutch era, Japan era, and early independence period, as follows

Order pattern and early method of oil-drop (1815-1950)

In 1815-1905, there was no agricultural ministry. There was the Great Garden of Bogor and matter of small-holder agriculture was handled by *Pangreh Praja*. Command was common to improve people of agriculture. In 1905-1911 Agricultural, Craft, and trade ministry has been established and research agencies were also established. In 1911-1921 it has been agricultural extension office. Extension was begun with oil drop method. In 1921-1942, agricultural extension office was established that was administratively under provincial government where extension done was expansion of previous activity. Key person related directly to farmer give example and experiment in field, as effort to give awareness by observing their selves real proof.

In 1942-1945, Japan invaded Indonesia and extension office performed its task by force. In 1945-1950, there was idea to establish centre for education for rural people in each district. In July 1948 in small-holder agriculture Office conference in Madiun led by Soewardjo, the idea was realized with establishment of Rural People Education Agency (BPMD). Because there occurred the Second Dutch Military Action, then in 1950-1960 there were only 375 BPMD in Indonesia. Then, according to Agricultural Ministry (1986), next agricultural extension periods were

Enhancement of oil drop method (1950-1960)

In 1950-1960, agricultural extension was the only effort to increase production, all employees of smallholder agriculture office were agricultural extension worker. Visits, courses, and meeting in village hall were main activities of extension, then participant of extension activity disseminate agricultural innovation to other farmers. Oil drop method was developed by adding drops to make faster innovation diffusion. BPMD was place for agricultural extension.

Commando and mass guidance pattern (1960-1970)

The 1960s era was known as Wealth Movement Operation Command (KOGM) era. At the time, field workers played role to accept command from their superior and gave command to farmer to do. It was done to reach rice self sufficiency (according to Agriculture Ministry (1960), in 1959 Indonesia imported 800,000 ton rice). In the period, in 1963/1964, the Five Farming efforts program was done by IPB that indicated average of double yield increase. Based on the experience, the five farming effort program was established as national policy in five effort improvement campaign.

In 1964/1965 hundreds students from 10 state higher education institutions

(including University of Gadjah Mada) guided farmers in 15 provinces in order to apply complete five farming efforts. It have increase yield twice. Then, in 1965, Mass demonstration program was made as national Mass guidance program and in 1968/1969 Gotong Royong Mass Guidance (government and private cooperation) was conducted. Since 1970/1971, national mass guidance and Gotong Royong Mass Guidance were stopped and replaced with the improved Mass Guidance, which since 1969/1970 planting season have been carried out in Yogyakarta province as a pilot project (Hadisapoetro, 1975).

Education pattern in Development Machine (1970-1999)

In 1969, as the first Five Development Plan (Pelita I) began, development pattern known as improvement and strengthening of Agricultural Extension Activities was started. For Pelita I (1969-1974), farmer group as agricultural extension living media began to grow, Agricultural Extension Centre (BPP) was renewed and developed, Field Extension Worker (PPL) and Specialist agricultural extension Worker (PPS) was created to do Mass Guidance program and, in result, paddy yield continuously increased. For Pelita II to Pelita V (1975-1995) agricultural extension institution was improved and added, through Development agricultural School, Agricultural Employee Training Centre (BLPP), Agricultural Information Centre (BIP), BPP, Seedling Centre, and Plant Protection Centre. In end of Pelita V, 1300 BPP have been established and rehabilitated. In the time, agricultural extension was done intensively. In 1980 the special intensification (Insus) program was done through farmer group advice through training and visit system and Indonesia succeeded in rice self-sufficiency in 1984. In 1987, supra insus program was carried out through cooperation between farmer groups.

To increase extension worker performance, in 1976 a career level of agricultural extension worker functional position was introduced, but only in 1985 it was just acknowledged by government with Decree of Administrative Reform Minister No.73/Menpan/1985. PPL (Agricultural Extension Worker) is a front line of agriculture development, because PPL face farmers directly. Until 1991, PPL was part of Mass guidance staff responsible in increasing main commodity plant production to meet national production target. At the time, PPL's task was to introduce new technology packages to farmers in top down manner with Training and visit system. Then, since 1991, PPL was transferred to Level Two Local government (regency) under local Office authority. They carried out task in one of the office's sub-sector, Food plant, plantation, Animal Husbandry or Fishery Office. The change occurred in 1996 to 1999, where BIPP assigned responsibility to PPL to work based on meeting farmer need, by integrated approach and left previous sub-sector approach. In general, PPL was under local office project and therefore effect of office in PPL work is very dominant than BIPP. PPL guided farmer more on project, so there was insufficient closeness between farmer and PPL. Result of Martins et al (1997) research in South Kalimantan and East Kalimantan indicated

that motivation of PPL to visit farmer was very low. It was due to the project have been over, or prevailing incentive system of career that is point credit for PPL for farmer visit was very small (0.034 point), than point credit when PPL attend seminar (1.00 point).

Local Autonomy pattern (1999-2006)

In 1996, local autonomy began, so agricultural extension was authority of local government according to Law on Local Autonomy. Many local governments have not been ready to do autonomy that caused change in many extension institutions function. Extension workers were moved to staff, so farmer and farmer group did not get guidance from field agricultural extension worker. There were stagnation of agricultural extension activities that lead to decrease in agricultural yield and overwhelming foreign agricultural product. Based on the experience, the government considered importance of extension so Law No.16/2006 on Agricultural, Fishery, and Forestry Extension System was established as base for extension working in the future.

Agricultural extension as educational process for farmers

Extension that is education process for people/farmer, since early history of agricultural development through the Great Garden of Bogor until the New Order era have tried to use various education technique and method, but they did not suit philosophy and principle of extension. In *Pangreh Praja* era, extension was done by command approach. In the new order era, extension was development machine with top down, crash program that should be done fast and thoroughly by farmer, so there were terms being forced, impelled, being able, accustomed to" (Tohir, 2000), which mean agricultural extension was done by forcing farmer, then they were impelled, able and accustomed to do. The method was far from expected extension philosophy. In some matters, the method can increase production, but made less autonomy and creativity. In addition, extension approach was done by many through target oriented and package system that less consider people diversity and ecology.

In the world, agricultural extension using group approach is done. In Africa, 51% extension was done with group approach, in Asia and Pacific 36%, in Europe 31%, in Latin America 45% and in North America 42% (Swanson, Burton, 1990). In Indonesia, agricultural extension is commonly done through farmer group; extension workers attend in group meeting and provide extension to all members of farming group (Maraatmadja, 1993). Unluckily, in the agricultural extension, in various times, farmers are considered as foolish so they should be provided with as many knowledge as possible. The model drove farmer to not be independent and mechanically do what the extension worker want. Even worse, farmer is made as place for storing unused thing, a container that should be filled with knowledge by extension worker. More complete extension worker fill the

contained, the better their reputation are. The more obey the farmer for being filled, the more said as exemplary farmer. Therefore, extension became activity deviating from andragogy and extension philosophy, farmers become deposit and extension worker become depositor. Extension workers did not communicate, but announce and pay deposit that the farmers should accept patiently to apply. Paulo Freire (1984) named the condition as bank system education.

In bank system education concept, knowledge is gift presented by people consider their selves as knowledge owner, to people they consider not knowing anything. In banking system education, position of teacher and learner or position of extension worker and farmer are far. In banking system, extension education system;

1. Extension workers teach and farmers are taught
2. Extension workers know all thing and farmers do not know anything
3. Extension workers think and farmers are thought
4. Extension workers talk and farmers listen to carefully
5. Extension workers discipline and farmers are disciplined
6. Extension workers chose and do their choice, and farmers accept the choice
7. Extension workers act and farmers get illusion as though they act through the extension worker's action
8. Extension workers select material for extension and farmers adjust their selves on the selection
9. Extension workers confuse their knowledge authority and their profession authority applied with ways contradict to farmer's freedom
10. Extension workers are subject in extension process, while farmers are object of the extension.

Dialogical extension

In banking education system, human beings are considered as creatures that can be adjusted and regulate. The more diligent farmer try to store storage they accept, the less farmer develop their critical awareness that is induced by extension worker intervention as actor of world transformation. Banking system model education reduces creative power of farmers or even eliminates it, so cause passive attitude.

The real extension worker should deny banking system concept at whole, and as substitution is concept on human being as aware human being, awareness directed to world as Roger (2000) concept in adoption process (awareness, interest, trial, evaluation and adoption). The real extension worker should release goal of giving deposit to farmer, they should replace banking system extension with dialogical extension. Dialogical extension has open and communicative character, with dialectic method using reasoning with dialogue as way to investigate a problem, and looking for solution. In this case, extension workers use

dialectic reasoning that think regularly, logically and carefully, with thesis, antithesis and synthesis in dealing with farmer problems involving farmer participation. Dialogical extension with dialectic approach presents problems, responding essence of awareness and directed to realize two-way communication. The extension technique does not only give characteristic of “aware of” only outside object but also inward as awareness of awareness. Extensions with dialectic method present problems that make farmers know and understand and look for solution, not only accept agricultural innovation change. Implementing dialogical extension requires solving extension worker-farmer contradiction. Therefore, dialog relationship is absolutely required for extension worker and farmer that participate actively looking for solution for the problems.

Model: farmer extension worker- extension worker farmer

Dialogical extension using dialectic method to look for solution over problems will solve vertical pattern that is characteristic of banking system education. Through dialogue, pattern of teacher and learner, and learner of a teacher will disappear, and a new concept will appear: teacher-learner with learner-teacher. In agricultural extension, it will create the model of farmer extension worker – extension worker farmer. It means that extension workers are not more as one disseminate to farmer, but one in dialogue with farmer also learn to farmer, while farmers beside learn from extension worker also teach extension worker based on their experience. Extension worker and farmer are jointly responsible to growth process for all involved. There are not people teaching other, or there is no people learn alone. Human beings teach world/agriculture, which in banking system education it is only owned by extension worker.

Banking system extension anesthetizes farmers and block farmer creativity, while dialogical extension with dialectic method include discover of reality continuously. In dialogical extension, increase in problems the farmer face will induce farmer to be more challenged and have obligation to respond the challenge. They consider the challenge relate to other problems in whole context, and not a theoretical one. They tend to be more critical over the world reality. Their response over challenge induce new challenge, followed with new understanding and gradually the farmers feel that they participate and are responsible for process to deal with problem.

Both extension concept and practice (bank system and dialogic) are contradictory. Banking system extension by mythicizing reality tried to cover certain facts illuminating how people exist in the world. The system block creativity and decrease awareness toward real world by isolating awareness of world, which deny human call, either in ontological or historical to be whole human being. The bank system extension does not emphasize dialogue, while dialogical extension consider that dialogue is very required to know reality the farmer face that shape people being critical and creative thinker that not depend on other.

Autonomous farmer

Dialogical extension with dialectic method that present problems acknowledges that humans as creature in process of being, as incomplete creature, unfinished and in unfinished reality. As to animal, although animal is not finished to, they do not have history, while humans know that they do not finish, they are aware of incompleteness that progress in history process. In awareness and incompleteness, education root was planted as manifestation that is very human. Character of unfinished nature and reality of transformation lead to that extension should be continuous process. Extension is education process using dialogical way based on creativity and stimulates reflection and action over the reality, create critical and creative thinker, which make farmers to be more autonomous that always try to solve their problem without depending on other.

Dialogical extension present problems and describe revolutionary future. Therefore, dialogical way contains prediction and expectation and accord to historical human nature. Then, it acknowledges humans as advance creature that view forward, which consider stagnation as a threat. For dialogical education/extension system, turn to past is only way to comprehend what problems and who they are, in order to be able to develop future with wiser attitude.

Dialogic approach is meeting between human having joint task to learn and act, which will be broken when one or more party cannot be modest. Dialogue may not develop without humility. Extension worker cannot begin dialogue with farmers, when extension worker always project stupidity to farmers and not be aware of his self insufficiency. Extension worker cannot start dialogue when he still considers his self as owner of truth and knowledge, which see others not know anything and not independent. Then, dialogue requires deep trust on humans; trust that he can make and make again, create and create again. Trust on someone is condition for dialogue, dialogue humans believe in other, even before he meets directly them.

Rooting on love others, humility, and trust, dialogue is a horizontal relationship that becomes trust to each other. Therefore, "love others as love myself" is principle every extension worker should have, even everyone should have. It is a contradiction when a dialogue which full of love, humility, and trust do not create climate of trusting to each others, which promote related people to deal with problems jointly. Trust to others is absolute condition for dialogue, and trust, in other side, is also grown by dialogue. When it fails, it will appear that there is not precondition, false love, false humility, and loose trust, so it cannot create true trust. Trust depends on proof provided by one party over others; trust is not possible when the party's words not suit their action.

Extension worker farmers

Dialogue contains expectation. Expectation roots on human

incompleteness, which always looking for and trying that can be done with others. Hopelessness is escape from reality. In dialogue, there is no hopelessness, but an expectation that should be strived continuously, a never ending effort to reach humanity. Awareness that hope cannot be realized without any action, waiting only, but should be attempted creatively. In the process, extension worker and farmers are urged by hope and when they strive with full of hope, they must be able to wait. Dialogue cannot be realized in hopelessness atmosphere. Actually, dialectic will not run if not involve critical thinking, viewing solidarity, which do not allow dichotomy among them. The thinking catch reality as a process and transformation and not a static one, but a continuous effort without afraid of risk.

In contrary to extension based on banking method with non communicative deposit, program content of dialectic technique in which farmers present problem is shaped and made by farmer's view on their world, theme source come from farmers, so farmers also share insight and experience, giving extension to extension workers which in the next process make extension agent farmers are accustomed to provide extension to other farmers. Therefore, extension material continuously is developed and renewed. Task of dialogic extension worker is to cultivate the agricultural field discovered from their investigation, then present the real world to farmers and not a tutorial but as problems that require participative solving.

In field, determination of problems the farmers face is used as base to formulate extension program. In theoretical and normative aspect, extension worker involve farmers in determining the problem. However, it is often done in non dialectic way. Zachri (Setyorini, et al, 2000) suggest that Group definitive plan/group working definitive plan (RDK/RDKK) what done by extension worker and farmers have not result in capability and behavior of planning on farmers. It may due to preparation of RDK/RDKK in field level tend to be done only to meet administrative requirement to get farming credit, which was processed mechanistically and not through dialogical group learning process. It also occurred when determine plan with group business plant method. Martins et al (1997) in their study in Kalimantan found that assessment method for farm need using RUK and determinant factor did not suit to achieve objectives, because there were only some BPP that prepared their programs and PPL working plan.

Actually, dialogic extension that discuss farmer problem and looking for solution based on farmer experience (experiential learning) have been ever applied with the Integrated Pest Control Field School (SLPHT) since 1990s, which result in extension worker farmers known as guiding farmers in which they are willing to be extension worker their selves. Participative extension with farmer field school is model developed and applied in some countries with fund from FAO such as in Asia (since 1980s) and Bolivia, Ecuador, and Peru (Rivera, 2001).

Understanding of farmer characteristic in extension: farmer vs peasant

In extension, extension agent should know who farmers are and their characteristic. Up till now, Indonesia farmers are conceived as “farmer”, although many of them are still “peasant”. Farmer is one running farming business, with wide land, market orientation, and has profit maximization (Mosher, 1984). Therefore, farmers always look for market opportunities to increase their profit, find out and apply agricultural innovation, so they are easy to accept new innovation and technology. In other side, peasant is subsistent farmer, white limited land, not market oriented, and has risk minimization principle (Scott, 1983). Peasant is described as person sinking in water at neck, so when the water ripples the person will sink entirely. Therefore, peasant is afraid of risk of harvest failure, which causes difficulty in accepting innovation or new technology. In this sense, it is not about wide or limited land owned, but about principle in running farming business; where many peasants in rural area that are afraid of risk minimize harvest fail risk. The peasants are difficult to convince by extension agent on agricultural innovation. They must see facts themselves, then they are willing to adopt when the yield is satisfying and the risk is low. Peasant should be guided dialogically in intensive manner to be gradually able to found its root of problems and cope the problems. In other side, for innovative, cosmopolite and encouraged farmers, dialogic guidance will accelerate and facilitate looking for solution over the problems. Assumption that farmers are foolish is not true; farmer and peasant have different farming experience that enriches their knowledge. Therefore, extension agent should place themselves as partner of the farmers and implement concept of extension agent-farmer and farmer-extension agent.

Change in peasant to be farmer may occur when peasant have high self efficacy; they are encouraged to take risk in business, because in every business, there must be risk. Hariadi (2004), in a study in Gunung Kidul, found that success farming group is influenced by high self efficacy, the farming group have business, cooperatives, making partnership with corporations. According to Bandura (1977), increase in self efficacy for someone (including farmer) may be done through activities of apprenticeship in success business organization, training and so on.

In reality, many peasants begin being autonomous and become farmer and source of innovation for other peasant. Padmanegara (Setyorini et al, 2000) recorded that many Indramayu farmers that were able to do analysis that the results were published in printing media they organize, and their analysis was supported by local government, local legislature, and local program with sufficient fund. In Pangalengan, through study and research, farming group were able to produce new insecticide for potato. In Indramayu, there is action research facility (ARF) that is media to make research by farming group sponsored by FAO. In Turi, Sleman, some farmers have succeeded in making experiments with various salak favor through fertilization and crossing, and results of the research was disseminated to kin, neighbor, and members of farming group. Researcher farmer and extension agent farmers have characteristic of 29-50 years of age, high

school/higher education, high social status (group administrator, society figure, own wide salak land (3500-17500 m²), sociable (Hariadi, 2007). Therefore, in the future, dialogic extension that is model of extension agent-farmer and farmer-extension agent should be developed, even create researcher-farmer. In this case, research institutions are not ignored but cooperation and interaction between extension agent, farmer/farmer group, and research institutions should be developed and improved.

Farmer institution

In extension in local autonomy era, Law number 22 and 25 year 1999 and GR (Government Regulation) no. 25/2000 are main guidance in regulating authority of administering government in central, provincial and regency/municipality level. The laws determine that authority of agricultural extension have been transferred to regental/municipal government. However, not all regency/ municipality have same understanding and capability in budget and technical and operational aspect (Zachi in Setyorini et al, 2000). Food tenacity program and agribusiness system development have been determined as main program in agricultural development. However, GR no. 38/2007 on Division of government matters, state that agricultural matter is not obligatory mater, but optional one (Anonym, 2007). It means that local government is permitted to not handle agricultural mater, when it is considered not as major potential. The next question is “how can food tenacity succeed when agriculture is not handled?” Therefore, GR no 38/2007 should be reevaluated.

Through both programs (food tenacity and agribusiness system development), agricultural sector is expected to have strength and can give optimal driving force for recovery and development of other sectors. Success is realizing food tenacity based on diversity of local food source, and strong and competitive rural-based agribusiness system should be supported with quality, creative and critical human resource in agricultural sector. Therefore, agricultural extension should base on principles of developing farmers' critical capability, which can be done through dialogic extension with dialectic method.

Objective of agricultural extension is to empower farmers and their family in order to be able to help their selves, family and develop farming business to reach better farming, better living, better environment and better community. To reach the objective, group approach was done for effectiveness and efficiency. However, in the last three decades, many farming groups were established based on program needs or agricultural development project from top (Zachri in Setyorini, 2000). In results, many farmer groups lasted until project age. Experience indicated that develop rural economic institution through top-down instructive intervention not dialogical way involving farmer participation face many failure because it does not root deeply on the society strength and need. Based on the experience, rural agribusiness development strategy should start and base on

developing of the rural society strength. It may succeed when used dialectic reasoning not top down one. Therefore, it may be reached an effort of placing, playing and functioning farm society and farmer institution as subject, initiator, and main agent of agricultural development in their region that oriented on farmer aspiration and interest.

To build economic power of farmer society in rural area, a dynamic, strong, farmer institution that have network to others farmer group is required. With development of cooperation network among groups can make farm business reach enough scale business unit. In addition, wide cooperation network among farmer group make the group as institution has high bargaining position, so it has similar position with other agribusiness agents. Effort of developing farmer institution structure is also regulated in the Law on Agricultural extension.

Local Autonomy pattern under Law on agricultural extension (2006 – Now)

Since local autonomy in 2000s, agricultural extension was very weak even stagnant due to local governments have not been ready. It affected directly or indirectly on decrease in production and productivity of various agricultural yield, very low competitiveness, abundant foreign agricultural product such as rice, soybean, onion and so on. It is ironic that Indonesia as agrarian country but imported agricultural product. It appears that the condition make the high officers in this country aware of importance of agricultural extension for farmer. So, law on agricultural, fishery and forestry extension system was issued in 2006, as fundament for revitalization of agricultural extension in Indonesia. The law gives legal certainty for agricultural extension and provides certainty of rights for farmer to get extension.

With Law no 16/2006, agricultural extension worker do not only get transportation allowance but also functional and profession allowance, so performance of agricultural extension worker is higher considering that problem in agricultural sector is increasingly complex. Farmer should be able to increase quality and productivity of agricultural yield, be competitive with foreign product, and penetrate market. These are challenge the agricultural extension workers face in the future. In the future, agricultural extension is harder because extension do not only facilitate learning process for farmers as main agents but also business community, but also develop farmer awareness as main agent and business community in conserving environmental function and institutionalizing cultural value of advance and modern agricultural, fishery and forestry development for farmer in sustainable manner.

Considering importance of agricultural extension in agricultural development, agricultural extension institutionalization that is ordered in the Law should be implemented consequently, although it is not easy to do in local area because some provisions are contrary to law of Local Autonomy. Local autonomy demanded change in agricultural development from centralized top-down to be

decentralized bottom-up. In this decentralization era, role of people is expected to be dominant. Government, particularly, local government, will be facilitator and motivator of development in their region. Local people should drive development. Planning, strategy, implementation, monitoring, evaluation, and financing are determined by local people that are facilitated by local government. Therefore, dialogic extension involving farmer participation with dialectic method is a technique that should be applied and developed. Agricultural extension is demanded to drive people in development. Agricultural extension is expected to be movement of farmer, agricultural business community and agricultural trader to develop agriculture.

Agricultural extension workers should work more professional. Meanwhile, environment conservation is more demanded due to non-environmental friendly development. Environment damage is not only local or national issue, but global issue. Ecolabelling, green label, organic certificate and ISO 14.000 are demand related directly to environment and this is important task of agricultural extension worker. Agricultural extension is expected to be able to make environment as part of development. Problems of farmer and agricultural technology are increasingly complex, with limited domestic extension agent and required support from various parties. Therefore, it is necessary private extension worker (Ameur, 1994). Privatization of extension will continuously increase due to increase in problem the farmer and rural society face, and development of electronic information system cause privatization of extension is accelerated in some countries such as United States, Dutch, and Australia (Rivers & Cary, 1997). In Indonesia, it has been accommodated with Law of extension system that differentiates state extension worker, private extension worker and voluntary extension worker. Through cooperation with various extensions, problems of extension in the future can be solved.

Agricultural extension in the future

Agricultural development in the New Order era more focused on increase in production, particularly food as implementation of green revolution in Indonesia. Agricultural development in the future should more emphasize on increase in income and welfare, so productivity and added value should be increased. To achieve the objective, not only farming business is developed, but agroindustry, marketing of agricultural yield, and supporting service business are also developed. The change in developmental leads to change in material for agricultural extension from production to agroindustry development, agricultural production marketing, development of agricultural supporting service and farming production. For implication of extension, we can learn from concept of Agricultural knowledge Information system) that is developed by Roling & Engel (1990), in which an organization and people shaping network and interact among them in managing transformation process, storing, diffusion and use of various agricultural

information and knowledge to support decision making to deal with problems and agricultural innovation application.

As a science, extension will grow continuously along with research development. As applied study, agricultural extension is a cyclical process that is continuously done, not stop in a point. It is due to farmer and society needs grow continuously, population grows, agricultural problems change, agricultural technology grows, and information technology also grow. The increased agricultural problems require newest innovations on technical aspect of agriculture and social economy. Agriculture innovation should continuously studied by research institution and higher education institutions, even farmers may also play role in finding innovation. Considering the condition, Roling & engel (1990) state that actually extension belongs to two sciences: first, agricultural science that cover biological control and farming business process, and second, extension science that include systematic of communication usage to help farmer in dealing with their problems through learning process. Therefore, research, extension and farmers are three components that should interact in agricultural development process (Valera et al, 1987).

Through law on agricultural, fishery and forestry extension system, extension institution is improved and reactivates that after local autonomy experience degradation. In central level, extension institution is in form of board and in determining extension policy is assisted by national extension commission. In provincial level, extension institution is in form of extension coordinating board and in order to stipulate provincial extension policy, it is assisted by provincial extension commission. In regental/municipal level, the institution is in form of extension executive board assisted by regental/municipal extension commission. In district level, its institution is rural extension centre (BPP) functions as meeting forum for counselor, main agents and business community. In village level, there is non-structural institution of village extension post. In the post, routine meeting is held once in two weeks (Anonym, 2006). In the village extension post, dialogical extension with dialectic method should occur that result in independent farmer and extension agent farmer.

In level village, through decree of Agricultural Minister No. 273/KPTS.OT.160/4/2007 on Guidance of farmer institution advice, farmer group is established. Farmer group should be developed, because through the group, social learning can be improved and innovation diffusion process may occur (Bandura, 1977). Developed Farmer groups may be joined into combination of group to develop agribusiness. The combination of farmer group may have farming business, processing, production device, marketing and micro finance business.

Paradigm of agricultural extension to face agribusiness ear in the future should place farmers as focus of agricultural development, that is, farmer as main

agent or subject, not as object. Farmers is manager of their farming business that should be viewed as human having potential to make decision in planning, managing and development of farming business for family welfare, society and have capability to face hard challenge in free competition and globalization era, and capable of applying sustainable agriculture development. Therefore, figure of farmer in the future is professional agricultural business person. Therefore, task of counselor in the future is heavier, should change peasant characteristic to be farmer characteristic, change from *risk minimization* to be *profit maximization* thought. The change suits to change in extension in Asian countries, which include change (a) from extension to increase production to extension that assist farmer in improving power in supply and marketing system, (b) from extension that transfer technology from research institution to extension that promote farmer to do experiment and learn from experience, (c) from top-down extension to dialogic extension that involve farmer participation and (d) from extension by government to plural extension system done by NGO, farmer organization, consultant, and agricultural corporation (Van den Ban & Samanta, 2006).

Models of agricultural extension in the future should more consider characteristic and potential of agricultural human resource, local potential, working network, and economic/societal institution. Development of local potential may be achieved when extension worker can do dialogic extension using dialectic thought, so create process of creative and having high self efficacy farmer that have confidence in business and finally become independent farmer, which success in business and can increase welfare and conserving development values.

For the future, increase in farmer capability and education and communication technology will increase use of information communication technology in agriculture development, increase in extension effectiveness and efficiency, as occur in India (Van den Ban and Samanta, 2006). Use of information communication technology will support dialogical extension process. Through modification of agricultural extension development program (Deptan, 2003), important elements in development of agricultural extension in the future in general;:

Elements	Before 2000	Year 2000 and the future
1. Learning method	<ul style="list-style-type: none"> - extension worker teach farmer, - demonstration 	<ul style="list-style-type: none"> - dialogic/participative - learn through experience and findings
2. Role of extension worker	<ul style="list-style-type: none"> - Teaching/ as teacher 	<ul style="list-style-type: none"> - partner Parallel to farmer - Guide farmer - Learn together with farmer
3. Farmer position	<ul style="list-style-type: none"> - Message receiver - Technology user 	<ul style="list-style-type: none"> - Active partner in extension and technology review
4. Extension	<ul style="list-style-type: none"> - Sectoral orientation 	<ul style="list-style-type: none"> - Orient to farmer need

program		
5. Approach	<ul style="list-style-type: none"> - Usually Top down - Less prioritize farmer need 	<ul style="list-style-type: none"> - Bottom up - Prioritize farmer need
6. Model	<ul style="list-style-type: none"> - Technology transfer - Linear 	<ul style="list-style-type: none"> - Location specific technology - Interactive
7. Intention	<ul style="list-style-type: none"> - Give recommendation - Adoption of linear innovation 	<ul style="list-style-type: none"> - powerful farmer - expert farmer chose innovation alternative
8. Strategy	<ul style="list-style-type: none"> - General - Similar 	<ul style="list-style-type: none"> - Orient to resource, social system, local culture, gender
9. Information source	<ul style="list-style-type: none"> - Research institution 	<ul style="list-style-type: none"> - Farmer, private sector - Education institution, research institution
10. Main objective	<ul style="list-style-type: none"> - Production improvement 	<ul style="list-style-type: none"> - Independent and welfare farmer - Competitive, sustainable, agribusiness,

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