

# LOCAL INNOVATION SYSTEM IN WONOGIRI DISTRICT TO EMPOWER THE COMMUNITY THROUGH REGIONAL EXCELLENCE IN ASEAN ECONOMICS ERA

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**Abstract.** The acceleration of implementation, diffusion, and innovation learning in all segments along with innovation outcomes in all segments will only take place when development planning that is integrated with local potency and excellence, which has competitiveness, and the availability of a comprehensive and accurate innovation data is exist. Sectoral paradigm along with a spatial and temporal development has to be revisited because the nature of development is human and environment as a whole (Santosa et al., 2012). The general purpose of this study is to formulate a model of local innovation system-sistem inovasi daerah (SIDa) of Wonogiri government. The approach to local development is done in systemic and systematic manner. Through this approach, all of the subjects, institutions, networks, partnerships, actions, production processes, and policies that affect the direction of development, velocity and diffusion of innovation, and learning processes are considered in order to achieve the development of Wonogiri district. After the data collection, workshop, and Focus Group Discussion (FGD) is performed, then the draft of SIDa is ratified by the Regulation of Wonogiri Regent. The next steps are socialization and public examination.

**Keywords :** local innovation system, the local government of Wonogiri, Focus Group Discussion

## INTRODUCTION

The president of the Republic of Indonesia, Susilo Bambang Yudhoyono (2010) dalam Santosa dkk., 2012 stated that in order to become a nation that master science and technology, we have to put innovation as the life blood of Indonesian life. We have to become an innovation nation, a house for creative and innovative people.

The government has ratify the Law No. 18 in 2002 about National System of Research, Development, and Implementation of Science and Technology-Sistem Nasional Penelitian, Pengembangan, dan Penerapan Ilmu Pengetahuan dan Teknologi (Sisnas P3Iptek) which among other things, it mandates local government to formulate strategic policies of science and technology development in their area. It

is realized that the improvement of competitiveness and social cohesion is a problem in realizing public welfare in globalization era. The nation competitiveness and social cohesion will only be realized when development is based on innovation.

The development of local innovation system-sistem inovasi daerah (SIDa) in Indonesia is deemed as urgent given various things are interrelated, especially the weaknesses of innovation system development in Indonesia so far, regional diversity and “transition” process in development as an effort to recover from multidimensional crisis. Things that can not be ignored in this transition process mainly concerned with local autonomy and the development of related regulations (Taufik, 2005). To develop science and technology needs commitment from components involved in the science and technology system, among other:

- a. All elements of community to encourage science and technology to contribute in developing a formidable economics system,
- b. The results of research, development, and engineering-penelitian, pengembangan, dan rekayasa (litbangyasa) non-departmental government institution-Lembaga Pemerintah Non-Departemen (LPND)-Research and Technology-Riset dan Teknologi (Ristek) should be utilized by the community,
- c. Utilization of facilities provided by government (central) optimally,
- d. The importance to build a science and technology network, in local, regional, national, and international level, so that the innovation process can running quickly, and
- e. The development of science and technology with innovation system reinforcement frame to create a prosperous, democratic, and equitable community.

Local innovation strategy of Wonogiri district in 2011–2015 is a statement of direction, priority, and frame of medium-term strategic policies of local innovation strat-

egy of Wonogiri district for the period 2011–2015. An innovation system is needed due to dynamic characteristic of market, global competition, tendency to build a network, position of employee with high wages, broad skill with various discipline, learning without knowing time and lifelong, and collaborative human resource management as well as the low entrepreneurial spirit of community. This condition urges government establish a system to solve increasingly complex problems in the community.

Various problems faced by the local government of Wonogiri district are the low quality of human resource, the low economic growth, and there is no productive and synergic cooperation between big companies and Small Medium Enterprises (SME). Public interest to work as civil servants remains a priority, whereas a developed country has at least 2% of its population work as businessmen. Currently, Indonesia has only reached 0.18%.

In terms of economic development of Indonesia, nationally and locally, based on the data from Central Bureau of Statistics Publication-Biro Pusat Publikasi Statistik (BPPS) of 2009, reviewed from the export of non oil and gas products-non minyak dan gas (non migas), during the first quarter of 2009 there is a decline in the value and volume of national export drastically (Soenarto et al., 2010) and even considered has reached its lowest point. Export (non migas) in January and February, 2009 only reached approximately 6.5 billion US dollar, after that, this export slowly faced an increase. Finally, in October, this export reached its highest value, reaching 10 billion US dollar. Cumulatively, compared to 2008, in 2009 the export from Indonesia decreased 22.31%. However, there is an interesting phenomenon in September and October, 2009, when the export faced an enormous increase. The export increase 20.72% if viewed and compared

between September and October, 2009, and increase 10.12% if compared between the export in October, 2008 and October, 2009. The past two months can be an elated thing. At least it appears that non migas export, which mostly performed by SME continues to grow. However, there is one thing that must be considered, that is about quality, either product quality, service quality, or distribution quality (Nurlela et al., 2009).

On the other side, China is a country with approximate population of 1.3 billion people. Besides that, China is also a country with the fastest economic growth in the world. In 2009, China economy grew around 8.7%, and in 2010 was projected to grow around 9.5%. It is conceivably, with a big number of population and a high economic growth, we can be sure that to fulfil China national consumption itself already take many resources from other countries. China often nicknamed as “consumer of the last resort”. China role in the arena of world economy is also increasingly taken into account. The ratio of China Gross Domestic Product (GDP) to the world GDP increased from 1.3% in 1990 to 7.3% in 2008. The report from Organization for Economic Cooperation and Development (OECD) once predicted that China will become the biggest exporter in the world, surpassing United States (US) and Germany in 2010. In this capacity, it is very normal if China also need a growing number of raw materials for their export. Consequently, the import from Association of South East Asian Nation (ASEAN) countries is forecasted to increase sharply. In this context, SME has a great chance to fulfil the demand from China, either finish goods for consumption or raw materials for China industries that will be exported to the other countries.

Basically, local economic development in some cases are different with national economic development, in following aspects

(Meyer-Stamer, 2003): (i) there are several instruments used to economic development are beyond the reach of local initiatives, (ii) national economic development is formulated and implemented by government; conversely, in the most extreme local economic development, is designed and implemented by private actors without government’s participation, and (iii) national economic development program include clear definition about the division of duties between legislative and executive body of the government; conversely, the initiative of local development usually includes vague role definition.

SIDa is a concept of the arrangement of a conducive networking through a network. Generally, networking is a mapping of institution actors’ interaction and other variables thereby forming a certain pattern of a certain network. The definition of network in innovation system be perceived narrowly or broadly. SIDa of Wonogiri district is a unity of a set of actors, institutions, interactions, and productive processes which affect the direction of development and the pace of innovation, as well as its diffusion and learning processes (including technology and widespread application). The document of SIDa of Wonogiri district 2011-2015 has a position as an operational manifestation of regulations and laws which contextually related for Wonogiri district. It also has a position as a manifestation and as a focus of innovation policy framework (medium-term development) of Wonogiri district in connection with the development of local innovation as an integral part of national innovation system. SIDa can become reference for Wonogiri district government and stakeholder in developing its innovation, diffusion, and learning. The document of local innovation strategy serves as a reference in: 1. Formulation of innovation policy and the instruments of its policy in Wonogiri district; 2. Formulation of annual action plan in developing innovation system

and Wonogiri district competitiveness.

The plan of local medium-term development-Rencana Pembangunan Jangka Menengah Daerah (RPJMD) for 2006-2010 of Wonogiri district in the field of Science and Technology Research-Riset Ilmu Pengetahuan dan Teknologi (RIPTEK) has lead to national innovation system policy. This RPJMD has been elaborated in the objectives, policies, programs, and strategic activities to realize the vision of a “competitive” community. The strategic activities in question are: developing research activities on local excellence; performing socialization and dissemination of science and technology findings, especially efficient technology for community; establishing and empowering local research committee; developing research development network in the local area. The success of local development in science and technology field must uphold the basic principal and the noble values, that is: Visionary: giving solution which has strategic and long-term perspective in nature, comprehensive and holistic (interconnections as a unity), excellence: overall stages of RIPTEK development, start from initiation until evaluation of the effect of RIPTEK on community, must be executed with the best procedure; Innovative: ensuring the creation of value-added and benefit for the community; Accountability: in the aspect of financial, moral, environment, cultural, social-community, political and economic; Sustainable: ensuring the sustainability of innovation as a work ethics for involved parties.

It is also need a support from knowledge based society, which supported by four aspects of foundation of social life, that is creation, maintenance, dissemination, and utilization of knowledge. Factors affecting innovation system and the competitiveness

are: natural resources; a relative conducive environment; adequate infrastructure; human resources; primary to secondary education level; still centralized non-formal education level; institutions that manage the innovation; source of innovation; communication with research institution that is easy to access; limited information about innovation; limited available technology and widely untapped; market assurance; business network; regulation; business environment; and global challenge.

Wonogiri district has natural resources, environment, infrastucture, potential human resources which can become a base for innovation development. The existing governmental system has conducted performance towards existing vision and mission but the performance has not intergrated on the basis of innovation. The final aims of development performance and community cohesion in general is to achieve high economic. Instinctively, community has been innovating in every activity, an effort to give guidance has been made, but it is has not based on needs but based on top down and pressure. Rehabilitation and conservation of resources has been made, even tough it's not proportionally yet due to various factor. Local innovation based on Long-term Budget Plan-Rencana Anggaran Jangka Panjang (RAJP) is possible to become a base line in development to achieve economic improvement if the driving factors can be realized and the inhibiting factors can be suppressed.

The researchers' team has conducted previous relevant research and has published its result on Wonogiri local research committee journal on 2012 about the implementation of Wonogiri SIDa. SIDa is a pattern of local development approaches which performed systemically. Through this SIDa development approach, all of the subjects,

institutions, networks, partnerships, actions, production processes and policies that affect the direction of development, velocity and diffusion of innovation, and learning processes are considered in order to achieve the development of an area. Innovation system basically, is a unity of a set of actors, institutions, relationships, networks, interactions, and productive processes which affect the direction of development and the pace of innovation and diffusion (including a good/the best practical technology) along with its learning processes (Santosa et al., 2012).

## METHODS

In conducting this research, the researchers cooperate with partner institution in implementing the SIDA. To conduct SWOT analysis required following comprehensive steps: identification of socioeconomic and community culture; determination of main priority of development and objectives; early socialization of program and participative dialog with the community; identification of existing needs and problems; preparation and designation of champion program, preparation of assistant; establishment of local level organization/committee; preparation of a forum for communication among agencies and organizations; collaboration, involvement, institutional networking; training, workshop, seminar, and assistance; provision of capital incentive/aid; development of information center and data base; provision of soft loans capital and incentive assistance; improvement of standard of quality and certification; development of industry: derivative, related, and supported; promotion and exhibition of products and potency; and monitoring and evaluation

## RESULTS AND DISCUSSION

After conducting Focus Group Discus-

sion (FGD) several times and coordination then the SIDA of Wonogiri district is arranged as follows:

### Local Economic Development

Local economic development is a process that includes the formation of new institutions, formation of alternative industries, improvement of the existing workforce to produce better products and services, identification of new markets, technology transfer, and development of new companies (Rahmawati et al., 2009). Every effort of local economic development has a main goal to increase the number and type of employment opportunities for local community. In effort to achieve this objective, local government and community must collectively take initiative of local development. Therefore, the local government together with the community using existing resources must take advantage of the potency of resources that have value-added in developing local economic (Lincoln Arsyad, 1999).

Through the joint regulation between Minister of Research and Technology and the Minister of Interior, the government make serious effort to increase the capacity of local government primarily concerned with efforts to increase regional competitiveness through SIDA reinforcement. This joint regulation mandates that each local government, provincial or district/city to establish policies SIDA reinforcement, where local economic development planning become an integral part with local Development Masterplan-Rencana Induk Pembangunan Daerah (RIP Daerah) and included in RPJMD as well as has a good effect in achieving the expected goals of economic development. Especially in elaborating the potencies to increase economic development and to create a profitable business opportunity in accelerating the pace of local eco-



conomic growth.

In the implementation of this SIDA, harmonization and synchronization which generate positive synergy between economic development and science and technology sector become an important requirement in developing the capacity of local competitiveness. Consequently, in formulating the prospects of local competitiveness development through the reinforcement of SIDA in the future should begin by identifying the problems and the conditions of current SIDA; opportunities that are open both in regional or national level to be utilized; and challenges that must be resolved.

To make SIDA reinforcement has a positive contribution in strengthening local economy, SIDA reinforcement must be an integral part of the five-year provincial/district RIP which stated in provincial or district/city RPJMD. In the context of developing local competitiveness is a potential strategy to be implemented in provincial or district/city in order to improve local community welfare. This strategy can not stand alone because it is more supply-side. Demand side is overlooked, thus suggestion to establish "inter-local cooperation" can help to improve local competitiveness. Local government can make a cooperation between provincial and district/city to take advantage of together build their local community with cost saving, as well as taking valuable lesson to improve the quality of local products, and sustainability of relationship with other area based on the principle of mutual benefit.

Therefore, the direction, strategy, and SIDA reinforcement, which is formulated in SIDA reinforcement roadmap, is brought toward one direction that is the development and reinforcement of interaction inter-sector research and development (R&D) with the real sector in the local areas (Rahmawati and Nurlaela, 2009). The researchers are well

aware that to develop the interaction between the real sectors in and inter local area need an integrated approach and comprehensive policy strategy. Based on this description, SIDA reinforcement is expected to give an impact to the improvement of local community welfare.

### **The Reinforcement of SIDA Policy**

The reinforcement of SIDA policy is an activity in strengthening macro policies which support the implementation of SIDA reinforcement in the local area. The SIDA policy is a guideline issued by the stakeholders to establish and implement the programs and activities in strengthening local innovation system. The reinforcement of SIDA policy must meet the criteria to be used as a reference in develop the innovation conducted between government institutions, local governments, R&D institutions, education institutions, institutions which support innovation, business world, and local community. As for the functions of SIDA policy are as follows:

- a. Giving important directions, signs, and signal in formulating programs and activities so that there is no overlapping between the stakeholders who implement SIDA;
- b. Giving informations about how the strategy to streng then SIDA will be executed;
- c. Giving directions to the parties who implement SIDA for the smoothness and coherence of efforts to achievethe vision, mission, goals, and objectives.

### **Coordination Team**

The coordination team of SIDA reinforcement on the provincial and district/city level is established and defined through the decision of local chief, in this case governor and regent/mayor. The composition of coordination team

represents stakeholders related to SIDA reinforcement that is academicians, governments, business world, and community associations. The coordination team of SIDA reinforcement itself is an extension of local chief. In the implementation, the coordination team can establish a workgroup and secretariat team. The secretariat team domiciled in SKPD who served as secretary of the coordination team.

The coordination team of SIDA reinforcement in province and district/city has the following duties:

- a. Formulate the roadmap document of SIDA reinforcement;  
Identifying the benefits potency of the development of innovation from technology and recommends strategy, policies, and specific crucial steps collectively and build consensus and commitment from stakeholders.
- b. Integrate the program of SIDA in the RPJMD document;  
Agreeing collectively from all stakeholders in a five-year RIP document and become a reference for SKPD in preparing programs.
- c. Synchronize, harmonize, and synergize SIDA;  
Synchronize, harmonize, and synergize the policies which will support the implementation of SIDA reinforcement.
- d. Arrange the elements of SIDA in the local area;  
This includes the arrangement of SIDA organizational issues, resources, and networks to achieve efficiency and effectiveness for the improvement of resource-based local competitiveness.
- e. Develop SIDA in the local area;  
Based on the reinforcement of SIDA policy and the arrangement of SIDA, the local government must imple-

ment the increase in value-added resource for regional competitiveness. With the indicators of the achievement of the outcomes from the implementation of SIDA reinforcement. The economic development must be directed to the development of knowledge-base economic. But contrary, the development of science and technology has to be focused on the effort to develop science and technology based on potency/wealth of resources owned by local area. In this case, the diversity of regional/local potency, technology in the community (indigenous/grass-root technology), and strengthening the SME, are the important things in the agenda for developing competitive local economic.

- f. Prepare the formulation of SIDA policy in the local area;  
This point at least contains four main components. First, to create a conducive climate so that all existing potencies can evolve and have a positive synergy (enabling). This of course has implications for, among others, not only in recognition of the importance of growth but also fairness/equality of opportunity to grow (equity & equality). Second, the effort to utilise the resources owned also need to be prioritized on the potencies owned (comparative advantage) to become a competitive advantage of the nation (strengthening). Third, the role of government, focussed on effort to facilitate, stimulates partnerships/alliances/cooperation, and productive investment. Fourth, the acceleration of capacity development to build, this is obviously needed to stressed on the acceleration effort and improvement

- of human resources quality, reinforcement of institutional factor.
- g. Coordinate the formulation of program and activities of SIDA in the local area;  
This point is intended to create a synergy in the increase of local competitiveness based on local resources through SIDA.
  - h. Conduct monitoring and evaluation;  
Monitoring is conducted periodically on the implementation of SIDA reinforcement on every level. Monitoring is performed by coordination team once every six month. While the tentative evaluation of the implementation of SIDA reinforcement by referring to the attainment of input, output, and outcome indicators.
  - i. Report the results of the implementation of SIDA reinforcement;  
The local chief reports the implementation of SIDA reinforcement in his area to the Minister of Research and Technology through the Ministry of Interior.

### **Determination of the Priority Theme/Field of SIDA**

SIDA is a development approach with a holistic and systematic manner. As an approach, SIDA is a development object that will be carried out. Thus, it needs the existence of priority field of a focused local development.

The priority field of development is not identical with the development sectors. Even tough in its implementation, the priority field needs an excellent sector as a puller (locomotive) of local economic.

In determining the priority field which should become consideration is: the priority field is strongly supported by the potency of

resources owned by local area; in accordance with the local development vision; agreed by all local stakeholders; become a local icon (local branding).

To determine the priority field takes several activities as follows: conduct objective analysis of local economic potency; conduct subjective analysis of local economic potency; conduct participative discussion of priority field determination; determine local priority field.

### **The Roadmap of SIDA Reinforcement**

The roadmap of SIDA reinforcement is intended to determine the direction and provide a planning context, long-term approach, determine the priority of an efficient use of resources, in order to improve the local competitiveness. In performing the assignment from the governor or regent/mayor, the coordination team formulates the roadmap of SIDA reinforcement, which includes: current condition of SIDA; challenges and opportunities of SIDA; the condition of SIDA to be achieved; the direction of policies and the strategy of SIDA reinforcement; focus and priority program of SIDA; action plan of SIDA reinforcement. The roadmap of SIDA reinforcement must be able to accommodate all programs and activities which funded by national revenue and expenditure budget, provincial revenue and expenditure budget, district/city revenue and expenditure budget, and other legitimate and non-binding revenue.

The coordination team must integrate the roadmap of SIDA reinforcement which has been prepared to the RPJMD. If the local regulation which regulates RPJMD has been determined, then the provincial government and district/city must make changes to the regulations governing RPJMD.



### **Synchronization, Harmonization, and Synergy of Policies Related to SIDA Reinforcement**

Synchronization, harmonization, and synergy of policies related to SIDA reinforcement are performed in order to avoid the overlapping of policies related to SIDA reinforcement which will be resulted in uncertain direction of SIDA reinforcement activities. For that, the stages of activities to be done are: the inventory of central and local policies related to SIDA reinforcement (inhibit, support, no regulation); map existing regulations/policies related to SIDA reinforcement; the analysis of regulations and policies; the draft of regulations/policies that can be synchronized, harmonized, and synergized; propose and recommend repeal, change, or rule making of local regulations and policies.

### **CONCLUSION**

Based on the above research results, the researchers concluded that regional development especially in Wonogiri is a continuous process that is done through innovative development of alternative industries, improvement of the existing workplace to produce products and services better, identification of new market, technology transfer, and development of new companies. Strengthening SIDA has a positive contribution in strengthening regional economy, the strengthening of SIDA must become an integral part of Development Master Plan - Rencana Induk Pengembangan (RIP) contained in five-year povincial/district RPJMD, through the strengthening of policy which should be used as a reference, the establishment is intended to determine the direction and provide a planning context, a long-term approach, setting priorities is an efficient use of resources, in order to improve regional

competitiveness. The determination theme/sector of SIDA priority development approach with a holistic and systematic manner. The construction of the object to be carried. Therefore, it is necessary to development priority in focus areas. Synchronization, harmonization, and synergy related to the strengthening of SIDA policy is conducted to avoid the overlapping of policies related to the strengthening of SIDA which makes the strengthening of SIDA becomes erratic derection. The action plan for SIDA reinforcement based on the roadmap of SIDA reinforcement which has been prepared must be integrated to the document of RKPD. If the local regulation which regulates the RKPD has been determined, it must make changes to the regulations governing RKPD.

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