



Research Article

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Role of the Innovation System in Supporting Regional Agriculture Development: Evidence from Southeast Sulawesi Province Indonesia

Julian Witjaksono

*The Assessment Institute for Agricultural Technology,
Puuwatu, Kendari, Southeast Sulawesi, Indonesia*

Jefny B. Markus Rawung

*The Assessment Institute for Agricultural Technology,
Manado, North Sulawesi, Indonesia*

Rita Indrasti

*The Centre for Assessment and
Agriculture Technology Development,
Bogor, West Java, Indonesia*

Siti Sehat Tan

*The Centre for Assessment and
Agriculture Technology Development,
Bogor, West Java, Indonesia*

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Abstract

Agriculture development in the regional autonomy needs more strong effort and more systematic in order to implement the equity of economic growth. This paper aim to describe the data and information related with evaluation worked of regional of research and development institutional in supporting innovation system. This assessment has shown that the development of agriculture innovation system in regional autonomy faced some constrains, viz. lack of human resources development and less supporting research infrastructure of research institutional. Besides, the policy which has been implemented by local government and local parliament did not match with the needed of regional innovation.

Keywords : *Innovation, Agriculture, Autonomy, Regional*

1. Introduction

Innovation is an important factor in supporting economic development and regional competitiveness. The occurrence of industrial-based economic shifts to knowledge-based economies demonstrates that knowledge and innovation are increasingly defining factors in economic advancement. Economic growth of the agricultural sector needs to be improved through innovation

to improve the competitiveness and welfare of farmers. Currently, there is one concept or mindset that is widely used to design a regional development strategy that is the concept of regional innovation system or often abbreviated with SIDA (Narutomo 2014; Herdikiagung et al. 2012; Lakitan 2011; Suradisastra 2006). This was strengthened by the joint decree of Minister of Research and Technology No. 3 year 2012 and Minister of Foreign Affairs No. 36 year 2012 on SIDA development. This joint decision "instructs" each district official to design the economic development of the region by developing a system of regional innovation. There is a strong message that the development of innovation in the region is a strategy for regional development in general. Furthermore, the description of the National Long-Term Development Plan (RPJPN) 2005-2025 was set in the National Medium Term Development Plan II (RPJMN II) 2010-2014 which mentions that the key to the success of innovation system strengthening implementation is the coherency of innovation policy in the perspective of national and local relations.

Nowadays, it is necessary to position the research activities as an integral part of the larger system, namely the innovation system, which can be positioned in the national scope (National innovation system, abbreviated as SINas) or at the regional level (Regional innovation system, abbreviated SIDA). In the conception of the Japanese SINas, some important things to be observed were: [1] SINas was built on the foundations of Japanese culture, traditions, and characters; [2] Governments are instrumental in setting up a conducive ecosystem for growing up SINas, by setting up supportive policies, primarily related to macroeconomics, social infrastructure development, education, employment, tax and finance, as well as science and technology; [3] It is necessary to cooperate with the developers (universities and research institutes) with the technology users (industry and society) in the development of technology needed to produce goods and/or services in accordance with market demand (Indraprahasta et al. 2014; Lakitan 2011; Triyono et al. 2014).

The innovation system is not a new concept, but the effort to realize SINas has never been seriously sought. It may even not be fully understood in its essence. Innovation system will only be realized in case of communication and interaction between actors or developer institutions with technology users, proven by the flow of information technology needs and information about the real problems faced by the user in conducting the production process of goods and/or services in accordance with consumer demand, as well as the adoption of technology produced by the developer by the user (Triyono et al. 2014). The continuity of these two-way flows is an indicator of the existence of innovation systems, at national, local, and local levels. The existence of actors or institutional developers and technology users, as well as efforts to facilitate, intermediation, and government regulation has not yet ensured that the innovation system has been awakened or will certainly run (Boschma R. 2015).. At this time, the actors and institutions have long been there, but the interaction and communication that has not been intensively and productively occurs. This is the current subject matter (Saediman 2009)

The innovation system will succeed if the potential is oriented and the real conditions are owned. Building an innovation system of regional agriculture must certainly be based on the potential and conditions of each region concerned. Therefore, understanding of the potential of the region must be precise and comprehensive, especially about the conditions of agroecosystem, availability and quality of manpower, availability and mastery of technology, institutional existing in the region, as well as resources and accessibility of financing for innovation actors. From the other side, the goals that you want to achieve must also be clearly defined, as well as built a shared commitment that is consistently championed, and persistent in the face of various obstacles that may be faced in the process of achieving the target. This paper presents the results of research on the role and function of institutional of research and development in areas aimed at identifying the indicator of research and development in the context of regional innovation systems supporting agricultural development.

2. Metodology

2.1 Mainstream

The existence of innovations in technological development is crucial, because it affects the development and its agility. The touch of innovation aims to increase the value added and the competitiveness of the product (Goddess AY 2012). The importance of further innovation was put forward by Jamaran (2009) which mentions that innovation is one of four factors that determine the success of technological development in addition to the readiness of technology (technology component), Capital and understanding technology (know-how). The statement above is in line with Budiharsono's Thought (2010) stating that technological development desperately needs appropriate innovation support. The importance of such innovations is related to: (i) technological development in need of sustainable innovation, (ii) Technological innovations are used to improve product competitiveness, and (iii) the importance of technological innovation based on a joint platform of agricultural development nationally supported by the system of regional innovation.

In the implementation of the sector Development program over the last 3 decades, the coercive institutional approach strategy is still very prominent. But mid-decade 1990-an agricultural research and development agency opened a new breakthrough to further boost the rate of agricultural growth through the establishment of The Assessment institute for Agriculture Technology (AIAT) in all provinces in Indonesia. This breakthrough marked the beginning of integration efforts of agricultural development technical institutions into the context of formal regional development by utilizing formal legal institutional, namely decree of the Minister of Agriculture number 798/1994 about the organization and governance of AIAT spread throughout the province in Indonesia (Witjaksono J 2011). Furthermore, in the context of a high hierarchy but more regional is issued the government regulation number 25/2000 and ACT number 22 year 1999 is enhanced in Law number 32 year 2004 regarding regional autonomy.

The consequence of the legal umbrella is that agricultural development institutions that are based on national sector agencies should adapt the plan and strategy of sector development into the mindset and objectives of regional development. In line with the change of management paradigm, according to Suradisastra (2006) that the pattern and strategy of institutional approaches to development of agricultural sectors should be shifted from coercive or forced and instructive properties to a bilateral aspirative institutional approach. This is due to the diversity of climate and atmospheric development of areas demanding site-specific development agencies. On the other hand, agricultural development agencies are required to be able to understand and deepen the existence and role of regional development institutions, both formal and non-formal organizations, as well as norms and regulatory institutions and local social institutions. Witjaksono (2011) mentions that the establishment of a technology commission as a non-formal organization is a form of effort to integrate the role of actors involved in institutional research and development of agriculture in the region. Furthermore, Bananiek (2012) in the results of his research mentioned that non-formal institutional roles can not be ignored as seen from the side of its existence in social societal relations, especially in the application of agricultural technology. This is in line with research that has been conducted by Saediman (2009) that during this coordination and synchronization of agricultural policy programs and research results in agriculture sector is still very weak reviewed from the aspect of performance.

State of the art that the bilateral approach between policy executor and sector development stakeholders was developed into a multi-lateral approach. Adjustment strategy of this approach is very important because in the context of regional development, agricultural institutions and research organizations no longer face the farmers as end-user technology, but also parallel to interact with the institutional other sectors that are in the system and management of the same government (Handayani et al. 2012; Herstad S et al. 2015). In the context of regional innovation systems, especially in Southeast Sulawesi, the network of innovation systems involving research institutions in this case is The Assessment Institute for Agricultural Technology (AIAT), Regional Research and Development

Agency (BALITBANGDA), Regional Research Council (DRD), university and private sector which is an institutional innovation that has systemic impact to strengthen, empower and engineer innovation, especially in agriculture that implemented and disseminated to be perceived benefits for regional economic development, fairness and welfare of society.

This research is an institutional study to measure the performance of actors who play a role in the innovation system in the area of regional expansion of regional research and development and Regional Development and Planning (BAPPEDA) based on the performance indicators of 3 capacity of research and development, namely (1) Capacity out sourcing, (2) R & D capacity, and (3) dissemination capacity. While the performance indicators are seen from each of the capacity of the research and development, namely (1) capacity out sourcing, with performance indicators include: (a) access to information sources of science, (b) Research patterns conducted, (c) Allocation of local resources utilized, and (d) the Partnership network; (2) R & D capacity, with performance indicators including: (a) The quality of the results of R & D, (b) The relevance of research and needs, and (c) the amount of research that has been developed; and (3) the dissemination capacity, with performance indicators including: (a) The site and the update frequency of information dissemination, (b) The number of publications, (c) The utilization of research results by users, and (c) Royalties of the research results.

2.2 Study Limited

This study is a combination of institutional studies and policy analysis that is more focused on the regulation, innovation infrastructure, capacity of Science Institute, Culture of Innovation and development of its industrial cluster in agriculture widely. The study was conducted in 2018 in the province of southeast Sulawesi, which includes the region of Konawe, East Kolaka and North Konawe.

2.3 Approach Method

This study uses a participatory method of planning approach through a triangulation model that combines qualitative and quantitative approaches. This method is used to collect data and information from all related parties and is relevant to this research. In addition, this study will also use a method of action research policy or multi-stakeholder action research approach, conducted by involving various stakeholders through information exchange and public consultation. Considering that this action research combines various interests, this research will involve all stakeholders related to development and agricultural technology, such as Bappeda, Balitbangda, agriculture Office, Regional Research Council, college parties, private sector, farmer groups, and also NGOS. In participatory planning method will be more emphasized on the prospective participatory method which is an adaptation of various methods of the comprehensive, encapsulated in an operational framework that is fast and complete. The cognitive properties of the method are the typology of focus on interactions and consensus building, which is capable of generating a consensus of the interaction between stakeholders, which can be used for planning purposes. This method is based on several principles, namely participation, transparency, consistency, effectiveness, relevance, repeatable, reasoned, and increased capacity of stakeholders (Bourgeois and Jesus, 2004).

2.4 Data Collection

Data and information collected begins at the grassroots level through the implementation of participatory planning methods that have been implemented through the stages of survey and observation involving village community, farmer groups and village community leaders. The number of respondents 30 people selected with the Simple Random Sampling method. To explore data and information has been done Semi-Structured Interviewing (SSI)-Semi-structured interviews. This technique is an interview that uses a systematic question guide that is only an open guide and is still possible to thrive during the interview. SSI may be conducted with individuals deemed to represent

information, such as farmers, outreach and community leaders. Furthermore, Focus Group Discussion (FGD)-focus group discussion. This technique is a discussion between several people to discuss things specifically in depth. The goal is to get an overview of a particular problem in more detail. At this stage of FGD has been involved with the role of key informant, the chairman of Farmer Groups (Gapoktan), the Office of Regional Agricultural Office, Bappeda District, and district level Counseling board. Furthermore, in the stages of participatory prospective approach has been performed an expert meeting that was attended by representatives of each stakeholders from provincial agricultural office, Bappeda Province, Balitbangda, Haluoleo University, Regional Research Council, provincial counseling agency, Committee of Commission in charge of development and agriculture, and members of Agricultural Technology Commission. At this time the expert is more focused on digging data and information about the policy and implementation of innovation on agricultural development that is more focused on 3 the capacity of the research and development with each performance indicator.

Primary data collection is conducted through the questionnaire for performance indicators in the capacity of research and development, stakeholder analysis and infrastructure policy analysis with university/college respondents, private sector, farmer community/community figure at the rural level, research and development institution and district level local government.

2.5 Data Analysis

The collected Data and information are further analyzed in a descriptive and scoring score based on the capcity of the velocity and its performance indicators on the Regional Research and Development agency and the Bappeda in 3 county samples. For more details can be seen in table 1.

Table 1. Research and Development Capacities and Working Indicators

No.	Research and Development Capacities	Working Indicators	Measuring Value
1.	Out Sourcing Capacity	Access to Scientific Resources	1 = Low 2 = Medium 3 = High
		Research Pattern	0 = Not Overlap 1 = Overlap
		Local Resources Utilization	1= Not efficient 2 = Efficient
2.	Research and Development Capacities	Quality	1 = Low 2 = Medium 3 = High
		Research and Needs Relevance	1= Not effective 2 = Enough 3 = Efective
		Number of Developing Research Product	1 = Low 2 = Medium 3 = High
3.	Dissemination Capacity	Web and update frequency deployment information	1 = Low 2 = Medium 3 = High
		Number of Publication	1 = Low 2 = High 3 = Medium
		Utilization of research results by users	1 = Low 2 = Medium 3 = High
		Royalty	0 = No 1 = Yes

Furthermore, the policy instruments are used by stakeholder analysis (Stakeholders Analysis) and infrastructure related to the innovation system itself. Instrument Analysis The policy is deemed prepared when it has identified a synergistic relationship between stakeholders and infrastructure support in the engagement of such roles and interactions. Stakeholder analysis based on the institutional performance indicators that include colleges, crate institutions (Bappeda, Balitbangda and AIAT), private (sectors that support business in the field of agriculture/agribusiness), government (local government) and the community (farmers, counseling, and farmer organizations/associations) with the scale used is the number scale 0-4 with the lowest value 0 and the highest value 4. Low value does not mean low quality but indicates the level of readiness. Analysis of infrastructure policy is done to know the level of readiness of facilities and infrastructure of the Board of research and development in support of regional innovation system. The scoring indicators include information and communication technology, training, funding and regulation, with a score of 0-3 scoring which shows the higher score value the higher the readiness of the R & D institution in the infrastructure readiness to support the innovation system.

3. Results and Discussion

3.1 Local R & D Institution Capacity

Agricultural development in the area in favor of regional innovation system is based on (and optimizing) the potential resources owned by the area itself (Nuryanti and Swastika, 2011). This will have a great opportunity to involve all local stakeholders. The resource is not only natural resources, but also includes local manpower, technology and local wisdom, regulations and policies and values and local cultural values, and regional economic potential as a source of business capital. Indeed, the innovation system is a strategic step and the right container for a new culture of work for the technology developers in the region. Scenario of regional agricultural development certainly needs to follow self-formation to match the big scenario of strengthening regional innovation system in realizing the national innovation system.

Based on the results of the FGD there are three very basic capacities that every research institute needs to have, namely: [1] capacity to absorb science originating from outside (sourcing capacity); [2] capacity for research and development of science (R & D capacity); and [3] the capacity to disseminate the knowledge and technology produced (disseminating capacity), it is in line with what was conveyed by Taufik (2005).

Outsourcing capacity of R & D institutions are indicative among others from accessibility to various sources of science information, no overlap of research conducted with research that (has) done elsewhere, and efficiency of use of resources in generating science is beneficial.

R & D capacity is reflected in the quality of research and technology produced, the relevance of the technologies produced with the real needs of the users, and the productivity of technology produced by the institution per unit of resources and/or costs managed. While the dissemination capacity is visible from the intensity and coverage of the publication of research activities conducted and technology produced through both print and electronic media, quantity and quality of technology adopted by the user, and royalties received by the institution of its technological products that are successfully commercialized (Oktaviana et al. 2014).

The orientation Model and the capacity of the institution of the Kelitbangan became an inspiration in the performance indicators of research and development Institute conducted in this study. Results of FGD conducted in 3 districts samples based on performance indicators of the Kelitbangan in the context of the development of agricultural-based system innovation (SIDa) can be seen in table 2. From table 2 Interesting to conclude that the overview of the basic capacity of institutional R & D that exist in 3 districts samples of FGD implementation in Bappeda and Balitbang area based on the performance indicators above shows that the staple capacity existing in the area is still very far from the expected. Thus it can be concluded that the local development institutions

(Bappeda and Balitbang provinces and districts) do not have adequate staple capacity to become an independent R & D institution.

Table 2. Working Indicators Score based on the main of research and development capacity in three district sample

No.	Main of research and development capacity	Indikator Kinerja	Sample Districts Score		
			Konawe	North Konawe	East Kolaka
1.	Out-Sourcing	Access to Scientific Resources	2	1	1
		Research Pattern	1	1	0
		Local Resources Utilization	2	1	1
2.	Research and Development	Quality	2	1	1
		Research and Needs Relevance	2	1	1
		Number of Developing Research Product	2	1	1
3.	Dissemination	Web and update frequency deployment information	1	1	1
		Number of Publication	1	1	1
		Utilization of research results by users	2	1	1
		Royalty	0	0	0

Source: Primary Data (Tabulated)

Based on the scoring score in table 2 shows that the capacity of out-sourcing in the board of the Kelitbangan in 3 districts of sample, Konawe District has a good out-sourcing capability compared to 2 other districts (North Konawe and East Kolaka). This is because Konawe district already has its own independent institution that is separate from Bappeda, while North Konawe and Kolaka Timur does not have the institution itself because of the elements of the research and development still found in the Bappeda. This condition led to the collapse in the two districts (North Konawe and East Kolaka) does not have a good out-sourcing capability because it is still overlapping between planning and research in the area. This also resulted in capacity ability in research and development in North Konawe district and East Kolaka is still low compared in Konawe district. While the ability to dissemination in three districts of sample is still evenly with low capacity score, although in Konawe district already has a research and development institution but from the publication, information technology and royalty has not been able to show its capacity as an independent research and development institution in the area.

Other FGD results show that technological flow in the form of technology packages designed or design by technology developers in this case R & D institutions, universities and private parties involved in research and development are the main important element in producing technology, the essential element needs strong support from the local government in the form of policy regulation, the facilities of the local government and intermediation support so that the technology to the user's hands in the effort to increase adoption capacity. Thus, the functional interconnectedness between research and development activities with innovation is a strong justification for placing institutions or communities in the field of research and development as one of the main actors who are the elements of technology developers specialized in the development of regional innovation System (SIDa). Communication and interaction between developers and technology users need to be intensive and continuous in order that the regional innovation system can productively stream its contributions to the development of the regional economy (Borrás S, Edquist C. 2013).. As a system, the SIDa can not be viewed as merely a collection of institutions, but more importantly the flow of information and interagency products (Lakitan B 2013b). Results of FGD showed that during the regional innovation system is only a set of institutions that functionally has not been the flow of technology and acknowledgement information and still many who have not produced research products or technology packages, this is in line with the research results Octaviana et al (2014).

The existence of the role of each major actor that becomes an essential element of SINAs will always remain important. The role of the three main actors today is still not optimal, but in the early stages of the role of the Government is still indispensable and even perceived still need to be improved in realizing a conducive climate for developers and technology users to intensify its communication and interaction. Regulation that is expected to be the foundation for the building of regional innovation system is currently still fragile and ineffective (still no support of local government funding in research and development, as well as other regulations that support the regional innovation system). Government intermediation institutions are still many functionally not working effectively (incentive programs, for example) as well as provision of facilities in the field of science that has not been adequate. The role of the Regional Research Council (DRD) has not yet been able to demonstrate its existence as a group of experts to be able to make a real contribution in the Agriculture Development specifically. This is due to the absence of regulatory support from the local government to encourage a greater role of the Regional Research Council to further contribute to the development of agriculture, for example the establishment of a consortium (Lakitan B 2013a). Therefore, efforts to improve the Government's role in facilitating, intermediation, and regulation are expected to increase the intensity of communication and interaction between developers and technology users, so that together and gradually develop mutualistic symbiosis (mutually beneficial cooperation) between the two, this is in line with what is conveyed by Taufik (2005).

3.2 Stakeholder Analysis

3.2.1 Konawe District

Stakeholder analysis involves identifying the role of major actors involved in institutional regional innovation systems. In this analysis there are 4 main actors who have an important role or as pillars of innovation development, namely universities, local governments, private and community. The results of stakeholder analysis in Konawe district shows that colleges have a vital role in developing innovation systems in the region. The role of the division of the Society including Regional Planning Agency of Konawe, Research and Development Institution of Konawe and AIAT has not contributed an important contribution in the institutional development of regional innovation system, but the role of R & D institute is very expected in the development of innovation in the region. The private sector has not been able to provide a contribution to the development of knowledge and technology in Konawe district. While the community's role is reviewed from the innovation culture is still very weak. The weak role of AIAT in the contribution of institutional development of innovation system in the area is due to the unguided communication and intensive cooperation with Regional Research and Development and Regional Planning Agency in Konawe district, this is because AIAT is a R & D institute of Agricultural sector seems to be more focused coordinate with the agriculture service in the district.

3.2.2 North Konawe District

Conditions in North Konawe district results of the identification of FGD showed no significant differences with the analysis of stakeholders in Konawe district. Score of role of higher education in North Konawe is lower than Konawe. For the culture of innovation, community in North Konawe has the lowest score when compared to Konawe, this indicates the absence of an innovation culture in North Konawe. Likewise with the involvement of private parties in North Konawe has the same score in Konawe. This shows the private sector has no role in contributing to the development of regional innovation systems. However, in North Konawe has several private companies engaged in oil palm plantation and mining.

3.2.3 East Kolaka District

Based on the FGD results by using stakeholder analysis East Kolaka shows insignificant differences with conditions in the district of Konawe and North Konawe. However, positive values are shown by higher scores compared to Konawe and North Konawe on the role of community in fostering a culture of innovation, especially the role of cocoa farmers in East Kolaka in the involvement of regional innovation system.

The results of the analysis of stakeholders in 3 district samples based on the role of the main actors in the regional innovation system showed different roles in each district sample. But in general it shows that the college has a significant role in the development of SIDA even though the score indicates a different value. On the other hand the role of society is still very low, it is seen from a very low innovation culture, while the private role is still not shown in the functional contributions in the development of SIDA. The interesting side of the role of R & D institutions (Regional Research Institution and AIAT) is still not showing its existence in the development of regional innovation system, this is due to synchronization and coordination is still partial.

3.3 Infrastructure Analysis

3.3.1 Konawe District

The infrastructure policy has strategic role in the institutional strengthening of regional innovation system (SIDa). From the results of FGD concluded 4 strategic pillars of infrastructure development in the effort to strengthen regional innovation system (SIDa), namely: Information and communication Technology (ICT), regulation, training and funding. FGD results conducted in Konawe in particular using a scoring score of 0-4 on the infrastructure analysis shows that the ICT has a score of 2 which shows that the development of information and communication technology in Regional Research Institution of Konawe is good enough but still needs to be optimized so that it can be more perceived benefits. For regulatory support especially low regional innovation system (score 1), similarly the development of human resources through training still has a low score (score 1), but on the funding side of the local government has demonstrated its commitment to the development of innovation systems. It can be seen since the establishment of Regional Research institution of Konawe has been consistently funded in the field of research and development in various sectors.

3.3.2 North Konawe

Infrastructure policy analysis in North Konawe shows the lower score of the district than Konawe from the funding side (score 1), but in terms of regulation, ICT and training have the same score value as Kab. Konawe. This condition is more due to the retreat of research and development North Konawe is still under in the Ministry of National Planning so that it still overlap between planning and research that causes the elements in the Regional Planning Agency have not gained priority from the policy side.

3.3.3 East Kolaka District

FGD results in East Kolaka based on infrastructure policy analysis shows lower score value from Konawe (score 2) and North Konawe (score 2) from the ICT side, but from the training side East Kolaka is committed to the development of human resources in the effort to strengthen the regional innovation system (score 2). However, regulatory and funding support is still in a low score.

In summary of the results of infrastructure analysis showed weak infrastructure policy support that includes information and communication technology, funding, human resource training and regulatory support in terms of research and development in 3 district samples. This condition shows

that the readiness of the local area to support the system of regional innovation is still hampered at the lack of infrastructure needs to carry out research activities in the area. Funding support in general still shows the lowest level in 2 sample districts (North Konawe and East Kolaka), although elements of increased human resource capacity through training have shown good levels but weak funding and regulatory support make the innovation system in the area run slow.

4. Conclusion and Policy Implications

4.1 Conclusion

Development of regional innovation system in 3 district samples based on the results of analysis on the capacity of the research and development generally shows that 3 capacity in the area assessed based on performance indicators in each of its capacity still indicate the occurrence of weakness in the development of capacity of the expansion in supporting the regional innovation system.

The result of analysis of the instrument policy strengthening the regional innovation system in 3 districts of samples based on the role of actors in the development of regional innovation system (universities, R & D institutions, national and private), showed that the college still has a vital role for the development of regional innovation system for agricultural development, while the research institute has not had an optimal role. This is because the institution of the research and development in areas such as Regional Planning Agency and Regional Research and Development Agency has not effectively played an important role in research and development for the regional innovation system. The analysis results also show that the private sector has not played an important role in the involvement or cooperation of research and development in the regional innovation system. However, from 3 districts of sample, analysis results showed that Konawe district has good readiness in favor of regional innovation system.

Analysis of infrastructure policy in this research shows that local government is still not showing its commitment in policy support (regulation) to encourage the development of research in the district samples. In addition, the commitment to funding support also still looks weak even in Konawe. Local government seems to have shown funding support in the activities of the research and development. While the efforts to increase human resource capacity through training in supporting the development of innovation systems have begun to be realized by the Board of the research and development institution in 3 districts of sample. Similarly, information and communication technology, the results of analysis in 3 districts of samples in general showed an effort to commit to the importance of information technology and communication has been implemented even though it is still not maximized.

4.2 Policy implications

The results of this research in general showed that the ability of research and development in the District to conduct research and development activities are still facing many obstacles. A consortium of areas in the region needs to be established and the need for intensive communication will be a container for how to improve the role and contribution of each of the local institutions by the organization of all related parties, especially the improvement of legislative and executive roles in improving the performance of the local research and development. This consortium pattern has been widely implemented in many countries and has proven effective in bringing together different interests to achieve common goals. This consortium Model will make a comprehensive thinking about how effective and efficient funding systems in research activities in the area work together with all stakeholders are expected to be effective communication containers, coordination patterns by eliminating the sectoral ego, the synchronization of agricultural development policies and the utilization and commercialization of the research results, this is in line with what is conveyed by the Lakitan (2013a; 2013b).

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Abbreviations:

SIDa	: Regional Innovation System
SINas	: National Innovation System
RPJN	: National Long-Term Development Plan
RPJMN	: National Medium Term Development Plan
AIAT	: Assessment Institute for Agricultural Technology
BALITBANGDA	: Regional Research and Development Agency
DRD	: Regional Research Council
BAPPEDA	: Regional Development and Planning
GAPOKTAN	: Farmer Groups
FGD	: Farmers Group
R & D	: Research and Development