

Evaluating the Gaps to Achieve Sustainable Development at the Village Level in Indonesia Using a Systemic Framework

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Abstract

The sustainable development goals (SDGs) proposed by the United Nations as a reference for global development can be an objective development indicator for countries, cities, including villages because they contain 17 goals with a vast spectrum and indicators. The SDGs framework of balancing social, economic, and environmental elements could guide the village's medium-term development to achieve its goal of sustainability, especially when in Indonesia, the government has given each village autonomy for its development with a direct budget to manage. This situation demands more responsibility for village governments to be able to achieve ideal and sustainable development. However, the national authority cannot be hand-out after giving the village funds by observing the complex problem of the village's development. This framework should be translated into a development model that the village government, higher district/city officials, or the experts can use to guide the village's medium-term planning. The model should prevent subjectivity and the wrong focus on the development priorities set by the village government. The model could also reduce the pressure from district/city development planning programs that can be inconsistent with village needs. This research aims to identify the focused gap by comparing current conditions with the ideal development framework using a systematic framework based on Soft Systems Methodology (SSM). The gaps found would be resumed as recommendations and output of this research. It would enable relevant stakeholders to collectively discuss the goals and priorities for each village to achieve more sustainable development.

Keywords

Village development model, sustainable development goals, system framework, soft systems methodology

1. Introduction

Campaigns on Sustainable Development Goals (SDGs) have been popular in the past decade and many governments in each country are implementing the goals of the SDGs into a strategic plan for national development planning. SDGs were to be a grand design for global development planning by changing the Millenium Development Goals (MDGs) in 2000 (Sachs 2012). At this point, SDGs have been criticized by Janoušková et al. (2018) that implementation was difficult in several nations that have complex problems including social, economic, and environmental, and also need government concert to follow SGD's targets and indicators. Therefore, a county with very complex and heterogeneous current conditions needs more effort to achieve SDGs compared to some nations with homogeneous conditions such as Indonesia. In Indonesia, rural and urban areas are too many polarities in economic, social, and development issues. This situation makes the Indonesia Government develop a regulation for village autonomy by Law No.6 / 2014 concerning the village that gives the village special authority to manage village funds given together with village autonomy for their affairs (Aziz 2016).

Village development planning is implemented by designing the Village Medium-Term Development Plan (MTDP) for the next 6 years of Village Governance. This document form from a discussion between the village government and the villagers/representative named 'Village MTDP Development Plan Forum' (called *musrenbang* in Indonesia) to describe village problems and which problems need to be solved first by defining the priority list (Ariadi 2019). However, the head of the village is elected by the democratic political system by-election, and the election brings a problem for the village government policy. Aziz (2016) explains that the villagers' participation in the village development plan forum comes as a political tool that is probably formed by the village election system and the village development plan probably goes unobjective and unsustainable. In this case, the head of the village has the

responsibility to decide the priority line in the village development plan. Otherwise, this will cause problems and the village will continue to be a concern of the central government.

Village development planning could be analyzed and modeled using a systematic framework based on Soft Systems Methodology (SSM). SSM can be used to describe complex problems such as policy decision-making and multi-stage bureaucracy issues with a qualitative approach systematically (Muhammadiyah et al. 2021). This study of evaluation model proposed to solve the general described village development problem and give a general recommendation to village affairs stakeholders specifically the Ministry of Village, Development of Disadvantaged Regions, and Transmigration of the Republic of Indonesia (*Kementerian Desa, Pembangunan Daerah Tertinggal, dan Transmigrasi* or *Kemendes-PDPT*) to achieve sustainable development in the village level in Indonesia.

2. Literature Review

2.1 Study of Sustainable Development Goals

The concept of the SDGs was developed by the United Nations that balances the development of the social sector, the economic sector, and the environmental sector (Barney 2000). This goal is agreed upon by the heads of state to be adopted and followed up for implementation in the long-term goals of national development must be in the absence of binding legal legitimacy (Holden et al. 2017). The SDGs in detail consists of 17 goals with 169 global and universal targets in the sphere of humanity, planet, prosperity, peace, and cooperation (UN 2015). Some countries with relatively homogeneous conditions can implement the SDGs optimally because the economic and social conditions of the country tend to be above the global average condition so some goals have been achieved as in SDG 1, No Poverty. The World Bank (2022) in its annual release presents data on the percentage of the poor population in the last two decades has decreased and the percentage of the population living below the poverty line, which has a per capita expenditure per day of less than US\$ 1.9, below the world average in Europe, East Asia, America, and the Middle East.

The implementation of the SDGs that have a broad development spectrum is a challenge for heads of state in preparing strategic steps to achieve the overall goals simultaneously (Costanza et al. 2016). To look at the correlation between SDGs agreements systematically, Pradhan et al. (2017) concluded that for every goal in the SDGs there is synergy and some are trade-off correlations. In the research, analysis was conducted on data on the success of SDG achievements against the success of other SDG achievements. The relationship between the SDGs that are positively correlated is categorized as synergies and the negatively correlated ones are categorized as trade-offs (Pradhan et al. 2017). As a resume, goals with social domains tend to have strong synergies with other SDG goals such as SDG 1, 3, 4, and 10, and goals with economic and environmental domains have a higher number of trade-offs than goals with social domains such as SDG 7, 8, 9, and 15 shown by Figure 1.

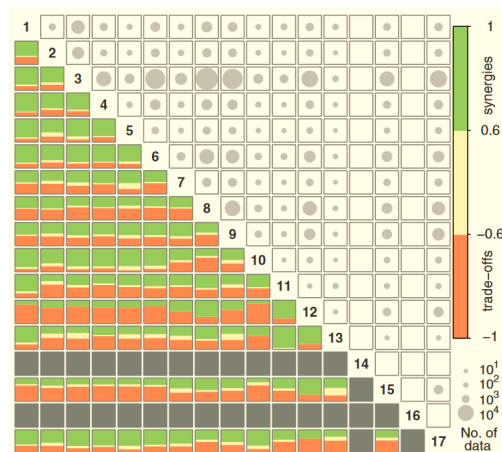


Figure 1. The matrix of synergies and trade-offs between the SDGs: synergies (green), nonclassified (yellow), trade-offs (orange), and insufficient data (grey). Source: Pradhan et al. (2017).

Those SDGs utopian and complex goals force the government of nations to eliminate some goals that could be possibly difficult to achieve with the current condition of their nations. This condition can be aggravated by differences in the

interpretation of stakeholders related to state development planning against indicators from the SDGs (Janoušková et al. 2018). However, there is research by Asadikia et al. (2021) to calculate the priority score of SDGs implementation with a machine learning approach. This study explains that the objectives that can be prioritized in the SDGs are seen from synergistic correlations as studied by Pradhan et al. (2017) so that SDG 3 is produced into a goal that allows it to be prioritized because it can synergize in general against other goals captured in Figure 2.

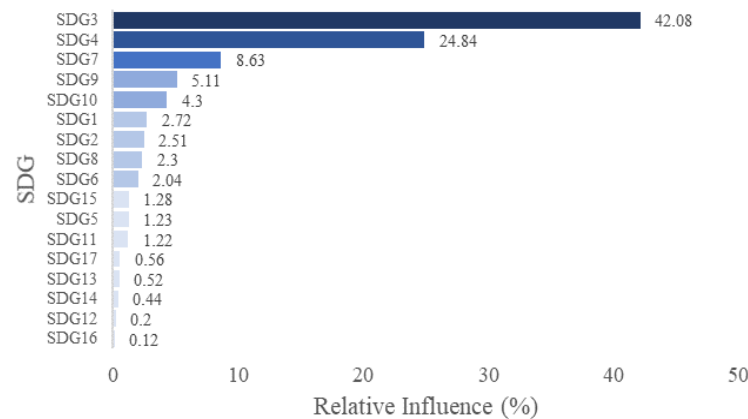


Figure 2. The relative influence (%) of SDGs on the SDG index based on all observations (Asadikia et al. 2021)

Based on data related to synergy and trade-off status between SDGs and the order of priority for the implementation of the SDGs, on-target policies can be formulated in the preparation of a country's development planning. The policy can also be based on dynamic system models and with analysis within the framework of soft system methodology to show that the alignment of achievement of each SDGs goal is systemically modeled (Collste et al. 2017; Muhammaditya et al. 2021). At some levels of policy implementation, such as from the national level to the regional level, there needs to be an adjustment of formats and strategies based on the analysis of stakeholders' charge in the implementation of development planning policies.

In Indonesia, the formulation of the SDGs implementation is mandated by the Ministry of National Development Planning / National Development Planning Board. Along with it, there are also Village SDGs, the village-level SDGs, which are compiled by the Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Village-DDRT). However, the plan still has many problems related to the indicators used and its integration with other development indices (Yudhiantara et al. 2021). This statement is in line with an essay by Reinert (2020) that is, the difficulty of the SDGs achievement indicators makes it difficult for the SDGs to be realistically implemented until Reinert proposes a Basic Development Goals (BDGs) formula with only 7 Goals with 10 targets/ indicators. In addition, Sjaif et al. (2021) in their study maintained the SDGs framework as a reference for village-level sustainable development by using only 25 indicators for the 17 objectives of the SDGs. This proposed concept of Village SDGs can be an alternative that is in harmony with the village's ability as a small scope to use more simple indicators.

2.2 The Problem of Forming Village Medium-Term Development Plan

Granting privileges in the form of autonomy to villages in Indonesia has existed since the enactment of Law No.6 / 2014 concerning the village. This law becomes the foundation for village autonomy so that villages can independently manage village development planning, village development goals, and village financial management as well as the existence of langusung funds from the central government (village funds) (Aziz 2016). The mechanism for planning and implementing development in the village is organized using legal instruments in the form of The Village Medium-Term Development Plan (MTDP) document used for 6 years of village administration and The Village Government Work Plan for annual implementation (Kessa 2015). The Ministry of Village-DDRT of the Republic of Indonesia explained that Village MTDP must pay attention to seven areas of village development implementation, including 1) village infrastructure and environment, 2) health facilities and infrastructure, 3) village health services, 4) educational and cultural facilities and infrastructure, 5) productive economic business development, 6) environmental preservation, and 7) community empowerment (Kessa 2015).

The Village Medium-Term Development Plan (MTDP) was formed through a discussion called the 'Village MTDP Development Plan Forum' (in Indonesia called *musrenbang*) between the Village Head, Village Officers, and Village Representatives which will use for 6 years of village administration (Ariadi 2019). In this process, community participation is an important element. Community participation is not only a condition in the process of preparing village MTDP, but also increases the objective portion so that village development goals can be right on target to solve the problems in the village (Chambers 1996; Farisa et al. 2019). Then, the implementation of village MTDP is based on the priority scale per year through The Village Government Work Plan. Community involvement is also important in overseeing the implementation of village funds for development to maximize the benefits of village autonomy (Aziz 2016). The stages of village MTDP development are illustrated in Figure 3.

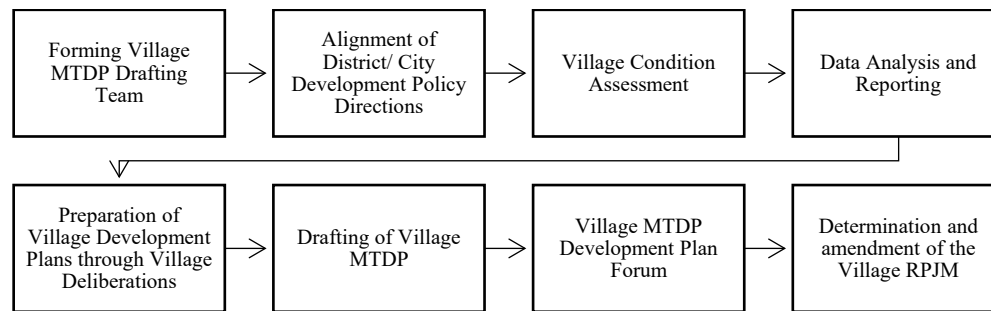


Figure 3. Stages of Village MTDP development according to Kessa (2015)

The formation of the Village MTPD is complicated because village development is also following district/city development planning. In other conditions, legally, the village head has his policy to develop his village according to the wishes and needs of the villagers. Along with the right to village autonomy, several problems that threaten the realization of sustainable development arise. Zuhro (2016) mentioned at least two problems of village autonomy, the ability of village human resources in running the government so that regional development tends to solve short-term problems only and the absence of harmony of development between regions and the practice of money politics interferes with the process of village government which is the result of the enactment of direct elections of village heads.

2.3 Soft System Methodology as a Systemic Framework

Research on soft system methodology (SSM) has a wide scope to holistically analyze an organization's management, industrial system, multilevel bureaucracy, to social systems (Mehregan et al. 2012; Muhammaditya et al. 2021). SSM is used to qualitatively describe complex situations to be able to find patterns so that a system can be more easily analyzed and found a solution to the problem (Checkland and Poulter 2020). In this study, the SSM to be implemented is slightly modified because of our plans to implement System Dynamic (SD) modeling for implementation so that from 7 stages of SSM will only be implemented the first stage to the fifth stage. Modifications to SSM are not as new as research from Roudriguez-Ulloa and Paucar-Caceres (2005) proposed the Soft System Dynamics Methodology (SSDM) as a combination of SSM and SD as a methodology.

3. Methods

This study uses SSM as a systemic framework to analyze the gap in the achievement of sustainable development at the village level in Indonesia. According to SSM stages or known as Checkland Methodology, there would be seven stages. However as described before, this research only takes five stages from all of the SSM stages. The first and second stages are how the problem situation is expressed from the unstructured situation including the actors, the process, and the boundaries. The real world is captured by reviewing Indonesian laws and regulations around the implementation of the SDGs and village development plans. This method was taken because the Indonesian constitution states that Indonesia is a state of law. There would be described as a rich picture.

The third stage is defining the root definition of the system, turning the rich picture as expressed situation into a system framework. Developing this system uses the CATWOE rule, which every system has this: Customers, Actors, Transformation, Weltanschauung/ Worldview, Owner, and Environment. The next stage is developing the conceptual models that describe every process of the transformations section of the root definition. The third and fourth stages

should to develop ideally because the model that is develop base on real-world conditions would be compared again with the real-world existing condition.

The last stage of this study is the comparison model with the real-world. This section uses the comparison-improvement tabel to analyze which part is possibly realized in the real-world with several improvements and which part does not exist in the real-world but these processes are important to the systems. Finally, the gap between the models and real-world conditions would be resumed as a strategy recommendation for systems improvement.

4. Data Collection

Data collection for the current situation in Indonesia around the SDGs implementations and village development plan is used to review all laws and regulations in force today. This capture of law/regulation review would be based on rich picture development to structure this situation and the multi-actor analysis. The applicable laws/regulations are summarized in Table 1. For the condition of the existing villages, the author made observations of five villages in Indonesia with different provincial locations.

Table 1. Law/ regulation review about SDGs implementation and village development in Indonesia

Law	Objective	Details (1)	Details (2)
Presidential Regulation no. 59 / 2017: Implementation of Achieving the Sustainable Development Goals	Article 1 paragraph 2: The SDGs National Roadmap is a plan document that contains strategic policies of the stages in achieving the SDGs	Article 4: Minister of National Development Planning / Head of the National Development Planning Board compiles and sets the National Roadmap of the SDGs	
Presidential Regulation no. 80 / 2021: Ministry of National Development Planning	Article 4: The Ministry of National Development Planning has the task of organizing government affairs in the field of national development planning.	Article 23: The Ministry of National Development Planning in carrying out its duties using organizational units and resources within the National Development Planning Board	
Presidential Regulation no. 81 / 2021: National Development Planning Board	Article 2: The National Development Planning Board carries out government duties in the field of national development planning	Article 3: a. coordination and formulation of national development planning policies e. preparation of cross-sectoral strategic initiatives as a basis for implementation	Article 4: The task of the deputy, in general, is to organize coordination and formulation of policies
Presidential Regulation no. 85 / 2020: Ministry of Villages, Development of Disadvantaged Regions, and Transmigration (Village-DDRT)	Article 4: The Ministry of Villages-DDRT has the task of organizing government affairs in the fields of village and rural development, empowerment of rural communities, acceleration of development of disadvantaged areas, and transmigration.	Article 11: The Directorate General of Village and Rural Development has the task of organizing the formulation and implementation of policies in the field of the village and rural development.	Article 12: a. formulation of policies in the field of technical planning of village and rural development, construction of the village and rural facilities and infrastructure, socio-cultural and environmental development of villages and rural villages, advocacy and cooperation of villages and rural areas, and facilitation of the use of village funds;
Law no. 6 / 2014: Village	Article 4: Village Arrangements aim at: ... e. form a village government that is professional, efficient and effective, open, and responsible; i. strengthening the village community as a subject of development.	– Article 72 paragraph 1 point d: allocation of village funds – Article 79 paragraph 1: village development planning refers to district/ city development planning – Article 79 paragraph 2 item a: Village Medium-Term Development Plan for 6 years, point b: Village Government Work Plan for 1 year	– Article 80 paragraph 1: the village RPJM is prepared by including the village community participation – Article 80 paragraph 3: the village development planning deliberation sets aside the priorities, programs, activities, and needs of village development

5. Results and Discussion

5.1 Problem Situation and Descriptions

The structured situation is around the SDGs implementation in Indonesia where the Indonesian Government adopt the SDGs proposed by the UN for national development guidance. In a structured government organization, this idea is mandated by the Ministry of National Development Planning/ National Development Planning Board. By the Presidential Regulation no. 59 / 2017 on Implementation of Achieving the SDGs, the Indonesian Government already has sustainable development planning until 2030 and has each indicator for 17 SDGs. However, the implementation of SDGs has too many indicators that be difficult to be the baseline for the ‘all-level’ development planning.

Based on Law no. 6 / 2014 on the Village, the head of a village has a big responsibility for the village and the villager’s development. In a way, the development mandate to the Village MTDP, forming by presenting the Village MTDP Development Plan Forum between the village officers and villagers/ representatives. This forum is important because the MTDP will role the village development for the next six years according to the head of village administration and decide which kind of development role want to be implemented. Back to the village law, the Village MTDP also refers to district/ city development planning which the district/ city development would change along with the change of the Regent/ Mayor. The expressed situation is captured in Figure 4.

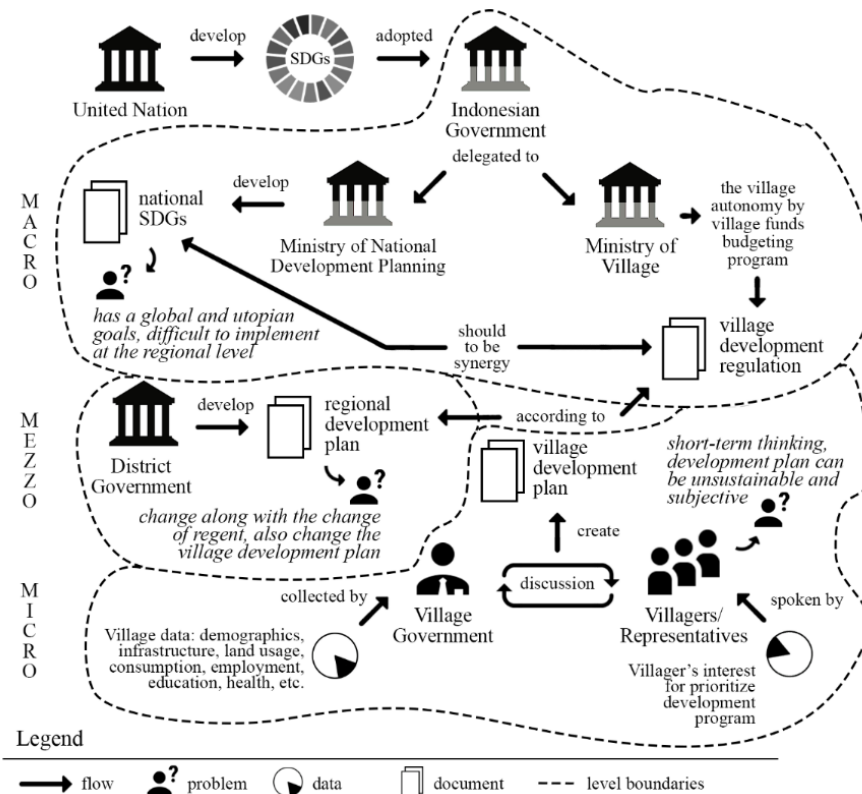


Figure 4. A rich picture of Indonesia's SDGs and village development planning

With this structured expression of the situation, the problem is shown structurally. This structured situation shows three problems that make village development unsustainable and not well-targeted. First, the national SDGs have global and utopian goals. It is difficult to implement at the regional level. The second is the Village MTDP in accordance with the regional development plan which plan could be changed along with the change of regent. The third, way to form Village MTDP must include villagers' participation which could possibly form the short-term thinking for the development plan and subjective according to the head of village election atmosphere. Thus, the problem owner of this situation is the Ministry of Village-DDRT because of the emphasis on village problems through the sustainable development was this Ministry.

5.2 Defining System's Problems

The CATWOE structure can be determined by analyzing the problem described in Figure 4. The system that is owned by the Ministry of Village-DDRT to achieve village sustainable development planning that aims for villagers' prosperity by forming the Village MTDP by the Village Government. To form Village MTDP, the Village Government needs to collect village data that presents an objective condition of the village, discuss with villagers/representatives, and define the priority of village development. The Village MTDP forming by according to the regional development plan, national regulation of village development, national development plan, and constitution.

Table 2. The CATWOE analysis

CATWOE	Element
Customer	Villagers/Representative
Actors	<ol style="list-style-type: none"> 1. Village Government 2. Villagers/Representatives 3. District Government 4. Ministry of Village-DDRT 5. Ministry of National Development Planning
Transformation	Achieve sustainable villagers' prosperity by forming a sustainable village development plan, considering villagers' needs, village conditions, and village budget, also in accordance with regional and national development planning
Worldview	Village welfare, sustainable development
Owner	Ministry of Village
Environment	Village development regulation, national development plan

Table 2 will guide us to the next step in determining the actors' roles and the transformation process. The actors' analysis is important to describe all actor's perspective, interest, problem perception, objective, and their position in the system which will help to determine the purpose of solutions (Hidayatno et al. 2020). In this system, there are five actors, and the analysis table is in the following table.

Table 3. The actors characteristic of Indonesia's sustainable village development

Actors	Problem perception	Objective	Interest	Causes of the problem	Resources	Position
Ministry of Village-DDRT	Slow village development	Rural development	Welfare and independence of the village	Each village has different characteristics	National authority on village development policy	Supporting all forms of independent / sustainable village development
Ministry of National Development Planning	National development is too complex	Targeted national development planning and each line of development must be in lines within the same goal	Targeted sustainable development	Too many goal indicators; National goals change along with the president's change	National authorities related to national development planning policy	Supporting all forms of consistent and sustainable development framework
Village Government	Village development rate is low	Village development that benefits the village community	Villagers welfare	It has no long-term development framework; Political intrigue of head-village election	Allocation of village funds; Village infrastructure	Need guidance / objective development framework to be objective in the community interest
Villagers/representative	Village development rate is low	Villagers are helped in economic and social sectors to prosperity	Villagers welfare	Human resources conditions; Natural resources are difficult to manage; Low accessibility	Village community resources	Hope that the village government accommodates the wishes of the whole community
District Government	Regional medium-term plans are often incomplete	Regional development goals achieved	Social welfare	Minimal synergy between regions related to development; Regional political intrigue	Regional development planning authority; Allocation of	Expect development synergy from national, regional, to village

Actors	Problem perception	Objective	Interest	Causes of the problem	Resources	Position
					funds; Regional infrastructure	

The first actor is the Ministry of Village-DDRT which is the owner of the system and the stakeholder in village development policy in Indonesia. In general, this ministry has synergy with the second actor, the Ministry of National Development Planning (NDP). Their interest is in development and welfare. The difference between both of them is only in policy scope authority which the Ministry of Village focuses on village affairs and the Ministry of NDP guides the national development role. The problems have happened in Indonesia is a very big country with its inequality. The gap in economic and social conditions in urban and rural areas is very visible. These parts make Indonesia's development complex and the government must pay extra attention.

The village government is the central actor in each village. The village government has the responsibility of their villagers, so the objectives are around village welfare, villagers' interest, and prosperity. Again, the political issue cannot be placed as a barrier to development. However, the village development is very dependent on the villagers and with everything involving the community, the political issue will follow. What should be offered in this situation is how to lead the villagers' opinion to be fair for the village, let the community decide which is the most priority goals of village development by determining together the village problems, what the villagers want, and what are the big goals of the village. This part could be helped by the fifth actor, the district/ regional government as a leader in the region and the communicator between villages.

5.3 Conceptual Model of System's Problem

Forming the conceptual model of the ideal system is to describe the detail of the transformations in the CATWOE framework. This model will describe through the system diagram framework in Figure 5.

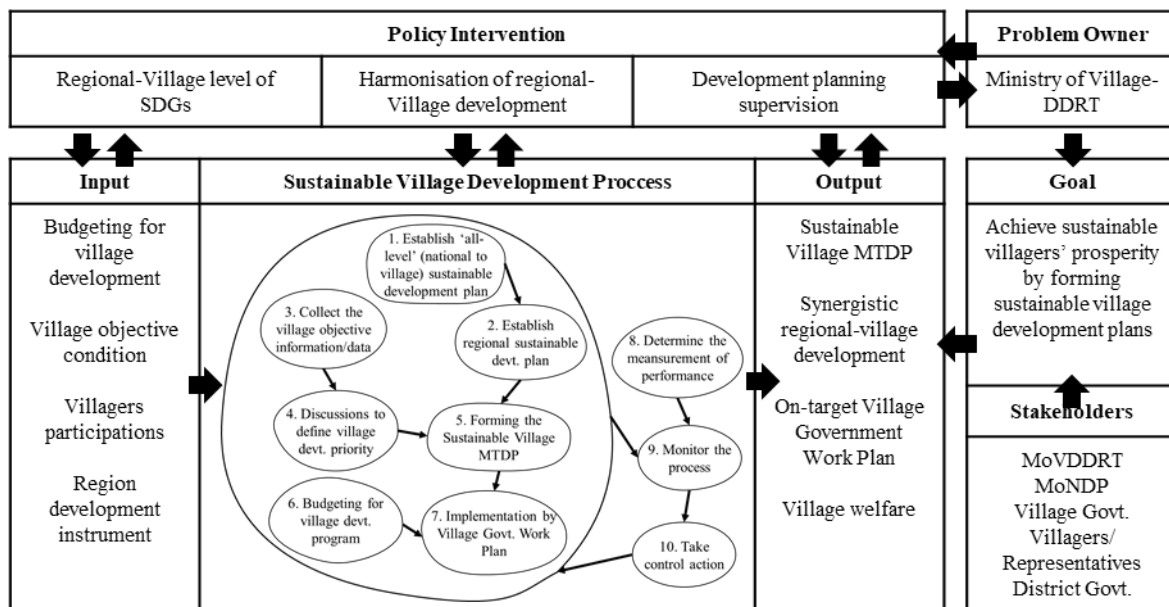


Figure 5. System diagram of sustainable village development planning

The transformations should determine some criteria which are recommended by Checkland and Poulter (2020) is 3E, the efficacy (E1) for knowing the transformation works, the efficiency (E2) for knowing that the transformation achieved goals with a minimum of resources, and the effectiveness (E3) to knowing the transformation could achieve some higher level or longer-term goal. This conceptual model also needs the control and monitor activities for all of the activities of the transformation process which should determine the measurement of performance as guidance. The activity list in the conceptual model inside the sustainable village development process is arranged considering 3E of the transformation process (see Table 2) and optimize for the E3 (effectiveness) by the eighth activity. Each arrow determines the flow of activities step-by-step or as a connection between activities.

This system's goal is to achieve sustainable villagers' prosperity by forming sustainable village development. There are three policy interventions possible to implement in this system to accelerate sustainable village development. Regional-village level of SDGs realizes to guide the regional and village stakeholder to achieve SDGs more efficient. Harmonization of regional-village development could solve the inconsistent development role in the region area. The development planning supervision is served by the national level stakeholder, the Ministry of Village-DDRT (MoVDDRT) and the Ministry of National Development Planning (MoNDP). The policy intervention is presented as input, but also the policymaker gets feedback from the process for controlling the 3E of outputs as a systemic cycle.

5.4 Comparisons of Model Gaps

After all of the conceptual models are arranged, the next stage is to compare the model with the existing situation. The activities and connections between activities given in the transformation process will be listed and analyzed the existing state, effectiveness, quality conditions, and idea for improvement. Table 4 describes all gaps between the model and existing condition and the purpose idea for improvement.

Table 4. Comparison activities between model and real-world situation

Activities	Exist	How is its E3	Measurement Criteria	Good/Bad	Ideas for Improvement
1. Establish 'all-level' (national to village) sustainable devt. plan	Yes	Too many particular indicators; Only determine national level	Bureaucracy implementation	Less of good	Establish village SDGs proposal that uses more applicable indicators at village level
2. Establish regional sustainable devt. plan	No		Regional development alignment		Establish synergic sustainable devt. plan between the region and villages; Need synergy with the Ministry of Home Affairs
3. Collect the village objective data	Yes	Sometimes the data is not taken properly and inaccurate	Precision data	Almost bad	Door-to-door data collections for base and update every six month
4. Discussions to define village devt. priority	Yes	Political interest and villagers' needs both are high	Less time to decide for priority devt.	Fair	Villagers are guided to take long-term thinking and be objective
5. Forming the Sustainable Village MTDP	No	Former MTDP is not sustainable enough			Stages devt. program to achieve sustainability
6. Budgeting for village devt. program	Yes	Good	On-target budget absorption	Good	-
7. Implementation by Village Govt. Work Plan	Yes	Takes more time than it should	Implemented development plan	Fair	Monitor and control the village work plan, make sure it is fast and on-target
8. Determine the measurement of performance	No				Village SDGs and its implementation guidance
9. Monitor the process	No				Village SDGs and its supervision guidance
10. Take control action	No				Village SDGs and its supervision guidance
Activities Connection					
Connection of Activities	Exist	How is its E3	Measurement Criteria	Good/Bad	Ideas for Improvement
1 → 2	No				National devt. planning could be just into regional devt. planning
3 → 4	Yes	Better for villagers also know about their village situation	Time to use	Fair	Data collection process involves villagers' participation

4 → 5	Yes	Priority list arranged properly	Time to use	Less of good	Double-check village and villagers' needs
2 & 4 → 5	No				Program adjustment with regional devt. planning
5 & 6 → 7	Yes	Implementation starts soon after budgeting	Time and budgeting	Good	Double-check to programs budget
1-7 → 9 & 10	No				All processes are supervised by villagers, village officers, and national/ regional representative(s)

6. Conclusion

The implementation of sustainable development in almost all countries has started with the SDGs as a frame of reference campaigned by the United Nations. In Indonesia, it requires more attention from actors/ stakeholders in village affairs and development planning, there are the Ministry of Village-DDRT and the Ministry of National Development Planning. These gaps are found in this study because the differences in the quality of development in Indonesia are quite far between urban, semi-urban, and rural areas. The problem of development in the village occurs because the average villager thinks in short-term development planning, the potential for development inconsistencies with changes in regional development planning, and the national SDGs are complicated to implement at the village level. The SDGs can be an ideal development framework from the national to the village level as long as the Government of Indonesia builds a sustainable development framework at the village level and synergizes with local governments. Then, the existence of indicators that are easy to measure by the Village Government can be a reference in building the Village MTDP.

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