

# **Sustainable Peri-Urban Area Arrangement Using a Land Consolidation Approach (Case Study: Sanggulan Village, Tabanan Regency)**

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## **ABSTRACT**

This research aims to explain the arrangement of peri-urban areas through a land consolidation approach that has been implemented by Sanggulan Village, Tabanan Regency. Land consolidation is an approach in organizing development by regulating land tenure, adjusting land use with spatial plans, procuring land for development purposes and improving the quality of the environment for sustainable development. Sanggulan Village is one of the peri-urban areas in Bali Province that has applied a land consolidation approach since 1984/1985. Despite facing several obstacles, the land consolidation process in Sanggulan Village was finally completed in 2019. Land consolidation in Sanggulan Village has had a positive impact, such as reducing land fragmentation, increasing development potential, improving accessibility, encouraging better property development, minimizing risk and uncertainty, and increasing investment value. This research uses a comparative case study and descriptive approach to find the positive impacts of implementing land consolidation for sustainable development in peri urban areas in Sanggulan Village. The results of this study can serve as an example for the arrangement of other peri-urban areas in Bali Province.

## **KEYWORDS**

land consolidation; peri-urban areas; spatial planning; Sanggulan Village

## 1. INTRODUCTION

The increasing of developments in Bali Province are growing very rapidly in line with the high level of development in urban areas (Habriyanto et al., 2022). This development in urban areas causes a high need for space as an area to accommodate activities in urban areas. The tendency for development in urban areas to spread influences growth in the surrounding areas (Lokantara & Amo, 2021). In line with this, the area around urban areas will grow by itself. And if suburban areas are not controlled through proper planning, they will create new areas with poor environmental quality (Harahap, 2013).

Peri-urban areas are areas on the outskirts of urban areas that have new physical characteristics that are growing to support activities in urban areas (Karina, 2017). Tabanan Regency can be said to be a Peri-Urban area in the Sarbagita Urban Area. In line with the trend of urban development, Peri-Urban development in Tabanan Regency is influenced by distance to economic centers, accessibility factors, and land prices. (Lion et al., 2008). The comparison of land prices which tend to be cheap compared to land in Sarbagita urban areas, as well as easy accessibility, has led to the high development of residential areas in Tabanan Regency. In response to these conditions, it is important to plan and organize the growth of residential areas in peri-urban areas in Tabanan Regency so that suburban areas can become well-planned residential areas to support activities in urban areas.

Land consolidation is an approach to managing development by regulating land control, adjusting land use to spatial planning, acquiring land for development purposes and improving the quality of the environment. (Aiyani & Parsa, 2019). Of course, in managing the Peri-Urban area, Tabanan Regency can apply a land consolidation approach to overcome uncontrolled development in the Peri-Urban area.

Sanggulan is located in the peri urban area of the Sarbagita Urban Area. of course, peri urban areas have a tendency for housing development that leads to partial, sporadic, and irregular development as a result of Sarbagita's urban development. to anticipate this irregular development, Sanggulan Village is trying to organize their village by using a land consolidation approach that was successfully implemented in 2019. This village can be a role model in structuring the Peri-Urban area in Bali Province, so that it can control uncontrolled development in the Peri-Urban area in Bali Province.

This research aims to explain the arrangement of peri-urban areas through the land consolidation approach that has been carried out by Sanggulan Village by comparing peri-urban locations where land consolidation has not been carried out in the Sarbagita Urban Area.

## 2. METHODOLOGY

This research is qualitative research through a literature review of the characteristics of Sanggulan Village as a Peri-Urban area in terms of the factors that influence the growth of the area, then this research uses a case study approach to review the application of land consolidation in Sanggulan Village as an approach in structuring peri-urban areas. This research uses observation and interview data collection techniques as well as secondary data collection in the form of reports on the implementation of land consolidation in Sanggulan village and previous research on peri urban areas in the Sarbagita urban area. Then a descriptive comparative study was conducted to find the positive impact of the arrangement of peri urban areas using the Land consolidation approach in Sanggulan.

### **3. RESULTS AND DISCUSSION**

#### **3.1. Peri-Urban Characteristics of Sanggulan Village**

The peri-urban area is slowly forming into a rapidly growing zone on the outskirts of the city and is composed of various land use characteristics (Pradana et al., 2021). Andreas Budiyantini & Pratiwi, 2016 explained that peri-urban areas are zones in which there is a mixture of rural and urban land structures. Apart from that, peri-urban areas are described as rural urban fringe areas, namely transitional areas regarding land use, social and demographic characteristics (Rostam et al., 2010).

Sanggulan Village is in Kediri sub-district, Tabanan Regency. Based on the explanation regarding the Peri-Urban area above, geographically the location of Sanggulan Village is on the outskirts of the Sarbagita Urban area where the economic centre of this urban system is centered in Denpasar City and Badung Regency (BPS, 2023). So based on location characteristics, Sanggulan village qualifies as a Peri-Urban area.

Apart from that, Sanggulan Village is traversed by national road accessibility which makes Sanggulan Village still have urban characteristics in accordance with Peri-Urban characteristics.

Land use characteristics in Sanggulan Village are generally residential and rice fields (BPS, 2023). So that the land use meets the criteria for a Peri-Urban area.

Based on the characteristics described above, Sanggulan village can be said to be a Peri-Urban area

#### **3.2. Sanggulan Village Land Consolidation**

Sanggulan Village, as one of the peri-urban areas of the Sarbagita Urban Area, has received a lot of housing development as a result of the high value of land in the Denpasar area as the core of the Sarbagita urban area. Housing development that occurs in this area tends to be partial and sporadic and spread out irregularly. Partial, sporadic and irregular housing development can have significant negative impacts, including:

1. **Land Fragmentation:** Partial and sporadic housing development tends to lead to land fragmentation, with land fragmented and inefficiently connected (Maina-Gichaba et al., 2013). This can result in wastage of land, difficulty in access, and sub-optimal use of infrastructure.
2. **Uncertainty and Ambiguity:** Irregular housing development often causes uncertainty and ambiguity regarding land ownership, land boundaries, and legal status of property (Pujiwati & Rubiati, 2017). This can complicate the licensing, financing and housing management processes.
3. **Inequality in Infrastructure Access:** Sporadic housing development is often not accompanied by the provision of adequate infrastructure, such as roads, clean water, electricity and other public services (Mulyanti & Sunaryo, 2014). This can lead to unequal access, transportation difficulties, and lack of access to essential services.
4. **Social and Economic Instability:** Irregular housing development can create social and economic instability in the area concerned (UN-Habitat, 2016). Land ownership conflicts, uncertainty about legal status, and inequality of access can result in social tensions and economic uncertainty.
5. **Limited Infrastructure Development:** Irregular housing development can hinder the development of necessary infrastructure, such as roads, drainage systems, and other

public facilities. This can limit the development potential of the area and hinder the growth of the city as a whole.

6. **Unsustainable Development:** Irregular housing developments often do not consider sustainability aspects, such as the use of green land, water management, and renewable energy (Steele, 1997). This can result in development that is not environmentally friendly and cannot survive in the long term.



Figure 1. Example of sporadic and irregular housing development patterns around Sanggulan

(Source: Google Earth, 2024)

The location of the Sarbagita Urban peri urban area does not apply land consolidation, so that residential development in the area leads to slum areas. Pesanggaran Village is a peri urban settlement area located in Denpasar City. The area was formed as a result of the development of Sarbagita Urban Area which has not been anticipated by structuring using the Land Consolidation approach. The irregular settlement development in the area was formed due to the high urban activity in Denpasar City which requires new settlement space in the peri-urban area. The irregular settlement area of Pesanggaran, causes land fragmentation and irregular road and waste infrastructure in the area (Wiriantari, 2022).



Figure 2. Sporadic and irregular housing development becoming Slum Area in Peri Urban Pesanggaran Village

(Source: Google Earth, 2024)

In another village, Ubung Kaja Village, which is a peri urban area of Sarbagita city, suffered degradation of settlement quality due to uncontrolled settlement development. The development of residential areas in Ubung Kaja Village is not anticipated by using a land consolidation approach, resulting in high residential density and poor infrastructure in the area to support residential areas. The poor condition of road infrastructure, clean water supply, drainage, waste water management, waste management and natural disaster mitigation causes residential areas in Ubung Kaja village to become slum areas in Peri Urban Areas.(PRAGANINGRUM, 2024).

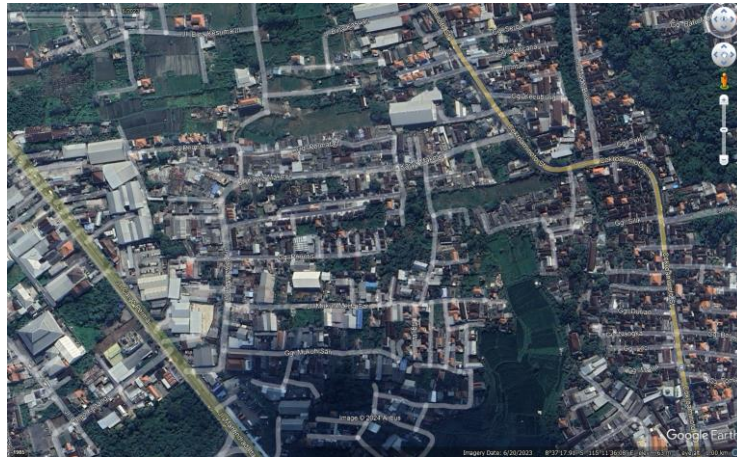


Figure 3. Sporadic and irregular housing development becoming Slum Area in Peri Urban Ubung Kaja Village

(Source: Google Earth, 2024)

Looking at the condition of settlements in pesanggaran village and ubung kaja village which are peri-urban areas of the sarbagita city that are developing towards slums because the development was anticipated early. Therefore, it is important to anticipate the development of new residential areas in peri-urban areas to prevent the emergence of slum areas in the future. Land consolidation in Sanggulan village is an anticipatory step to prevent slum areas in peri urban areas.

Based on the Regulation of the Minister of Agrarian Spatial Planning/Head of the National Land Agency Number 12 of 2019 concerning Land Consolidation, the definition of Land Consolidation is a policy of restructuring control, ownership, use and utilization of land according to spatial planning plans as well as efforts to provide land for public purposes in order to improve environmental quality, and maintenance of natural resources by involving active community participation (BPOM RI Regulation No, 2018). Ariyani N, Parsa I discusses the system for implementing Land Consolidation as an effort to increase the efficiency and productivity of optimal use of urban land (Ariyani & Parsa, 2019).

The land consolidation (LC) process in Sanggulan Village began in 1984/1985 in Subak Sanggulan with the APBN budget. Despite problems with some landowners resisting the LC project, work continued until certificates were partially issued in 1987. After the legal process, the government won this case, but the land owners continued to control the land according to the conditions before the LC (Gede Suacana et al., 2024). To maintain stability, the LC was redesigned in accordance with the wishes of the original landowners with the issuing of certificates at a later stage, but activities were halted due to problems with some residents and limited funds. Ultimately this process can be completed in 2019 with realignment activities. Looking at the conditions above, the process of implementing land

consolidation is not easy to carry out due to limited public understanding of land planning through the land consolidation approach. However, the implementation of land consolidation in peri-urban areas is more suitable to be implemented considering that its spatial characteristics have a lower intensity compared to the implementation of land consolidation in core urban areas.

The land consolidation process in peri-urban areas will be easier to implement with approaches and efforts to facilitate the realization of mutual understanding and agreement by the government and the community. Likewise, the land consolidation process in Sanggulan Village is implemented through mutual understanding and agreement by the government and the community so that the process can be completed more smoothly and successfully, and provide greater benefits for the local community as well as for the development of the region as a whole.

### **3.3. Positive Impact of Sanggulan Village Land Consolidation**

Land consolidation has the potential to increase land value in the following ways:

1. **Reduces Land Fragmentation:** Land consolidation combines fragmented plots of land into larger, more organized plots of land. This reduces land fragmentation, which can increase land value because larger, more connected land tends to have higher value (Kurniawan & Manaf, 2023).
2. **Increases Development Potential:** Consolidated land allows for more efficient and planned development (Ardinal & Idham, 2021). With more optimal land use and in accordance with spatial plans, the potential value of land can increase along with better development potential.
3. **Improving Accessibility:** Land consolidation allows providing better infrastructure and smoother accessibility (Susantio & Beatrice, 2024). Land that is easily accessible and connected to major infrastructure tends to have higher value because it makes use and development easier.
4. **Encouraging Better Property Development:** Consolidated land has the potential for better and sustainable property development (Ardiansa, 2022). With optimal rezoning, developers can plan properties to a higher standard, which can increase the resale value and attractiveness of the property.
5. **Minimizes Risk and Uncertainty:** Land consolidation helps reduce the risk and uncertainty associated with land ownership (Mulyani, 2014). Land that has clear and consolidated ownership status tends to have a more stable value and is more attractive to investors.
6. **Increasing Investment Value:** Land that has been consolidated tends to be more attractive to investors because of the potential for more planned and sustainable development (Ihsannudin et al., 2018). This can increase the value of investment in property and accelerate regional development.

Thus, land consolidation can provide significant added value to land by reducing fragmentation, increasing development potential, improving accessibility, encouraging better property development, minimizing risks and increasing investment value.

From the explanation of the positive impact obtained from land consolidation in Sanggulan village above, it can be seen that spatially the location was planned in a structured and neat manner. Of course it can be a solution for structuring Peri-Urban areas in Bali Province. The spatial approach is very helpful in implementing land consolidation arrangements (Janna et

al., 2009). The spatial impact can be seen from comparative Google imagery before land consolidation and after land consolidation in the latest year 2024.



Figure 2. Existing Satellite Image before Land Consolidation Arrangement in Sanggulan Village, Tabanan

(Source: Google Earth, 2016)

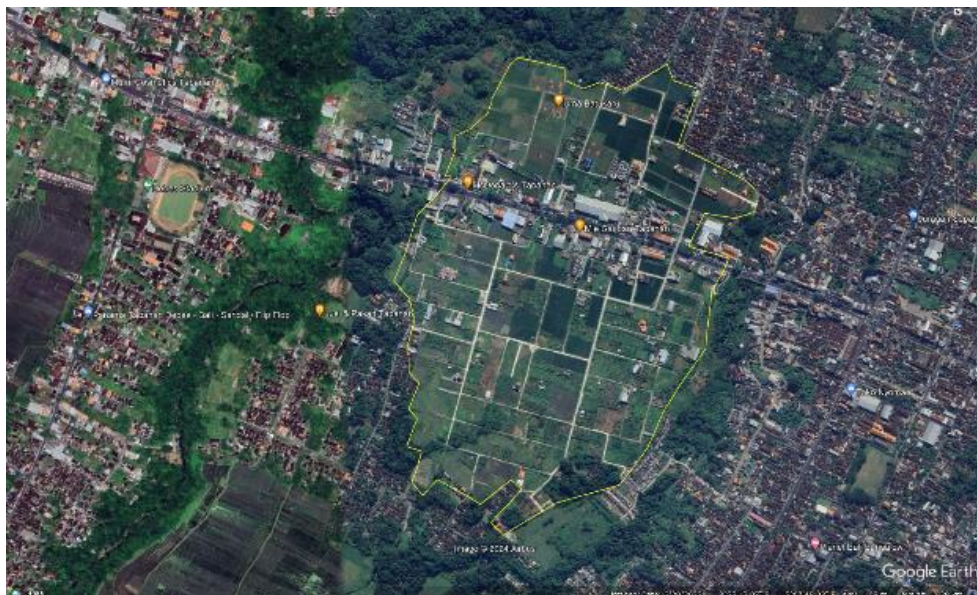


Figure 3. Results of Land Consolidation Arrangement in Sanggulan Village, Tabanan

(Source: Google Earth, 2024)

Based on the picture and description above, it can be seen that with a land consolidation approach, area mapping in the Peri-Urban area can have a positive impact on the image of the area and to improve the quality of the Peri-Urban area.

#### 4. CONCLUSION

From the discussion above, the conclusions in this research can be described as follows:

1. Sanggulan Village in Tabanan Regency is one of the peri-urban areas in Bali Province which is the Sarbagita urban border area. The characteristics of Sanggulan Village as a peri-urban area are characterized by land use dominated by settlements and paddy fields, as well as good accessibility via national roads.
2. Housing development that occurs in Sanggulan Village tends to be partial, sporadic and irregular, which can have negative impacts such as land fragmentation, uncertainty about ownership status, inequality in infrastructure access and socio-economic instability.
3. The solution to this problem is that the government and the people of Sanggulan Village have implemented a land consolidation approach since 1984/1985. Despite experiencing several obstacles, the land consolidation process in Sanggulan Village was finally completed in 2019.
4. Land consolidation in Sanggulan Village as one of the Peri-Urban areas has had positive impacts, including: reducing land fragmentation, increasing development potential, improving accessibility, encouraging better property development, minimizing risk and uncertainty, and increasing investment value.

From the points above, it can be concluded that the land consolidation approach is effective in managing peri-urban areas in Sanggulan Village, Tabanan Regency. This can be an example for structuring other peri-urban areas in Bali Province.

The recommendation from this research is that the land consolidation that was successfully implemented in Sanggulan Village can be an example for other areas that face similar problems. Active involvement of the community and government can ensure the success of the land consolidation implementation. There is a need to increase human resource capacity, both in government and society, regarding the understanding and implementation of land consolidation. Training and socialization need to be carried out intensively.

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