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DEVELOPMENT OF AGRIBUSINESS PLACES ON PALU RIVERSIDES

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ABSTRACT

Agribusiness may potentially develop on Palu Riversides. This research aims to formulate a sustainable agricultural spatial innovation for the Development of Agribusiness Places on Palu Riversides. The methods used for this study were field observation, satellite image map observation, and literature review. The results showed that the implementation of sustainable agriculture through the development of agribusiness places in urban areas could take advantage of the open spaces designated as green open space zone on the Palu Riversides, namely the River Green Area which is outside the riparian zone, the river overflow runoff area. To achieve this objective, it requires ability to innovate in spatial planning so that an urban agricultural area that is neatly arranged into an agribusiness places can also be developed into one of the city landmark.

Keywords:, City Landmark, Green Open Spaces, River Green Area, Spatial Planning, Urban.

INTRODUCTION

Research on the Development of Agribusiness Places on the Palu Riversides is a continuation of a study on the Development of Urban Agricultural Potential in Palu River Area carried out by researchers before a tremendous natural disaster hit Palu City on September 28, 2018. According to Hamzens and Moestopo (2018), research on the Development of Agricultural Potential in Palu River Area was initially based on the desire of the Palu City Government to develop Palu City into a Green City and the presence of a Special Economic Zone in Palu City, which will lead to an increase in population and food needs for the residents. Palu River Area is one of the potential locations for urban agricultural development in Palu City. Research published in mid-2018 has identified the efforts that need to be made to develop urban agriculture potential in this area. The results of research by Hamzens and Moestopo (2018) resulted possibility to develop an integrated urban agricultural area with empirical conditions, namely land consolidation, determining the type of activity, recruiting executors and developing human resources, preparing infrastructure and facilities, and sustainable management.

Continuation research was carried out in the same year related to the concept of extension for urban agricultural

development in the Palu river area, Hamzens (2018). This research, published at the National Seminar on Agribusiness Development at Udayana University Bali, September 14, 2018, stated that the implementation of urban agricultural development in the Palu River Area requires extension interventions that aim to motivate people to be confident in making decisions for participating and supporting the implementation of urban agricultural development. This study formulates an appropriate extension concept for the implementation of urban agricultural development, including (1) the concept of extension that can provide broad insights into various agricultural-based economic activities, (2) the concept of extension capable of supporting community readiness to participate, and (3) extension concept capable of providing a complete picture of the various activities that will take place in an Urban Agricultural Area.

The natural disaster suffered Palu City requires the government and community of Palu to immediately adapt in order to be able to move the life order, including restructuring the economy towards a better future and well planned to face the disasters. Development carried out in Palu City must pay more attention to the morphological characteristics of Palu City, which is prone to various threats of natural disasters. Alternative relocation of residents is something that is still difficult to do, this effort is constrained by the availability of land in Palu City and its surroundings, funding, and until now there have been no research that confirm the location in Palu City is entirely safe from the threat of natural disasters that can take place periodically. Physical development, both in the form of infrastructure and the construction of facilities such as buildings, must be done very carefully and must consider the safety aspects comprehensively and sustainably. For this reason, at this time it is better not to rush to build new buildings in Palu City.

On the other hand, it is a priority to develop the daily and future economic activities for Palu City residents, to raise and increase productivity of the local people. This is very important, in order to have their economy activities quickly recover after the disaster, life can develop for the better, and still have the hope of good life in the future. It requires the ability to adapt in economic activities. Agribusiness is one of the economic activities with its implementation in the upstream sector uses a stretch land, will be safer and more sustainable, as in general the agribusiness-based economy does not require the presence of multi-storey buildings. Considering the limitations in physical development in Palu City, agribusiness-based economic activity, in this case, cultivation, is thought to be suitable for the local people. Therefore, an agribusiness that is carried out sustainably needs to be considered by all parties, and can be an alternative to driving the economy.

Agribusiness activities must be carried out sustainably. This means, it requires spaces for the perpetrators, the business places that can ensure agribusiness can sustainably take place from time to time. For this reason, potential and suitable places are needed to carry out and develop agribusiness activities. To realize a well-ordered Agribusiness Places, the Government of Palu City needs to rearrange the layout of Palu City by considering spatial planning aspects that are suitable for agribusiness activities as a new economic model for urban communities. An economic model that is more effective, safe, comfortable, and sustainable. The limitations on the construction of multi-story buildings are due to the safety aspects, and the obligation to provide green open space according to existing regulations where at least 30 percent of the city area must be green open space (Law Number 26 Year 2007 concerning Spatial Plan), is an opportunity to organize sustainable urban agriculture based on agribusiness, by utilizing the green open spaces.

For the future rearrangement of Palu City through sustainable urban agriculture

based on agribusiness, it is necessary to arrange the spatial of agribusiness places, stipulated in the spatial plan. The spatial planning of the Agribusiness Places must be carried out based on the spatial planning objectives mandated by Law Number 26 Year 2007, that mentions: the implementation spatial planning aims to create a safe, comfortable, productive, and sustainable national territory.

The Palu Riversides is one of the green open spaces in urban areas in Palu City, which has the potential as a productive space for the implementation of sustainable urban agriculture. In particular, the Palu Riversides could be developed as an Agribusiness Places. This places must have two functions as the protection and cultivation functions. The agribusiness activities in this places, it can be done with a priority of cultivation activities.

For the local people of Palu City who are accustomed to managing services and trade as the leading economy, the problem in developing the Palu Riversides as an Agribusiness Places is transforming the Riversides which is dense with various land uses, into green open spaces that can function as sustainable urban agricultural land, as an Agribusiness Places on the Riversides.

This research aims to provide information related to sustainable agricultural spatial innovations for the Development of Agribusiness Places on the Palu Riversides, which is a future hope for the people in Palu City. It is hoped that this research can suggest the government and local people of Palu City to immediately adapt to build the community's economy in the Palu City, an economy based on the morphology of Palu City, which is prone to the threat of natural disasters.

MATERIALS AND METHODS

Study site

The research was conducted in the Palu river area, Palu City, Central Sulawesi Province, in October 2019 - March 2020. The research area is on the left and right sides of the Palu Riversides from the south of the Palu River, which is the borders between Sigi Regency and the Palu City, towards the north of the Palu River in Palu City to the Palu Bay.

Materials Used

The materials used in this research were: (1) a previous research: Hamzens and Moestopo (2018), Hamzens (2018), and Ye Sun and Tomohiro Akiyama (2018); (2) documents related regulations and relevant information, namely: Law Number 26 Year 2007 concerning Spatial Plan, Regulation of the Minister of Public Works Number 05/PRT/M/2008 concerning Guidelines for the Provision and Utilization of Green Open Space in Urban Areas, Regulation of the Minister of Home Affairs Number 1 Year 2007 concerning Spatial Planning of Urban Green Open Spaces; Local Government Regulation Number 16 Year 2011 concerning Regional Spatial Plan (RTRW) for Palu City 2010-2030; Building Arrangement and Environmental Planning (RTBL) for Palu Riverside Areas, Palu City, Palu City Government in 2016; and (3) Satellite Image Maps to support data collection and analysis.

Survey and Sampling

The survey was conducted in the Palu Riversides Area, Palu City, Central Sulawesi Province, and the sampling was taken from the boundaries of the Palu River in the area of Sigi Regency and Palu City to the estuary of the Palu River in Palu City.

Research Design

This analytical study combines review of relevant regulations and supporting documents. Additionally, a survey was also conducted. Observations were made of the existing spatial conditions in the Palu River Area. Data obtained from the survey and observations via satellite imagery. The survey results and observations via satellite imagery were analysed to obtain the formulation for the Development of an Agribusiness Places on

Palu Riversides. The research was carried out in the following steps: (1) reviewing references related to previous research; (2) conducting a survey at the research location; (3) collect data based on survey results and collect data in the form of information obtained from documents used in the research; (4) conduct analysis; (5) draw conclusions based on the results of the analysis

Data analysis

The analysis was carried out descriptively and qualitatively to produce a formulation for the Development of an Agribusiness Places on Palu Riversides, as a form of innovation from sustainable agriculture in urban areas, which includes: (1) analysis of the spatial potential of the Agribusiness Places by calculating the area of green open space available on the Palu Riverside, using satellite imagery; (2) analyse the legal aspects of the development of the Agribusiness Places on the Palu Riversides, based on the available documents; and (3) innovating sustainable agricultural spatial planning for the development of Agribusiness Places on Palu Riversides.

RESULTS AND DISCUSSION

Description of the study site

The research was conducted in the Palu River Area, Palu City, Central Sulawesi Province, Indonesia. The research areas surveyed were the Palu Riverside's left and right sides from the southern side of the Palu River, the boundaries of Sigi Regency and Palu City, towards the northern part of the Palu River estuary into Palu Bay. Figure 1 shows the location where this research was carried out.

Potential Analysis of Space Availability

Based on Local Government Regulation Number 16 the Year 2011 concerning Palu City Regional Spatial Plan 2010-2030, the River Green Area is approximately 25 meters wide area on the left and right side on Palu Riversides, from the outer embankment foot of rivershed area to the land of urban facilities area. Table 1 shows an analysis of the potential availability space for the Development of Agribusiness Places on Palu Riversides.

Figure 1. Location for Developing Agribusiness Places on Palu Riversides.
Source: Satellite Imagery via Google Earth 2020

Table 1. Analysis of Potential Available Space for the Development of Agribusiness Places on Palu Riverside.

Descriptions	Unit			
	m	m^2	km^2	ha
Witdh of the River Green Area @25m (both left and right side)	50.00			
Length of the Palu River Area	4,642.98			
Total area of River Green Area = Sustainable Agricultural Land for Agribusiness Places on Palu Riversides		232,149.00	0.2321	23.2149

Source: Calculated by using Satellite Imagery via Google Earth in 2020.

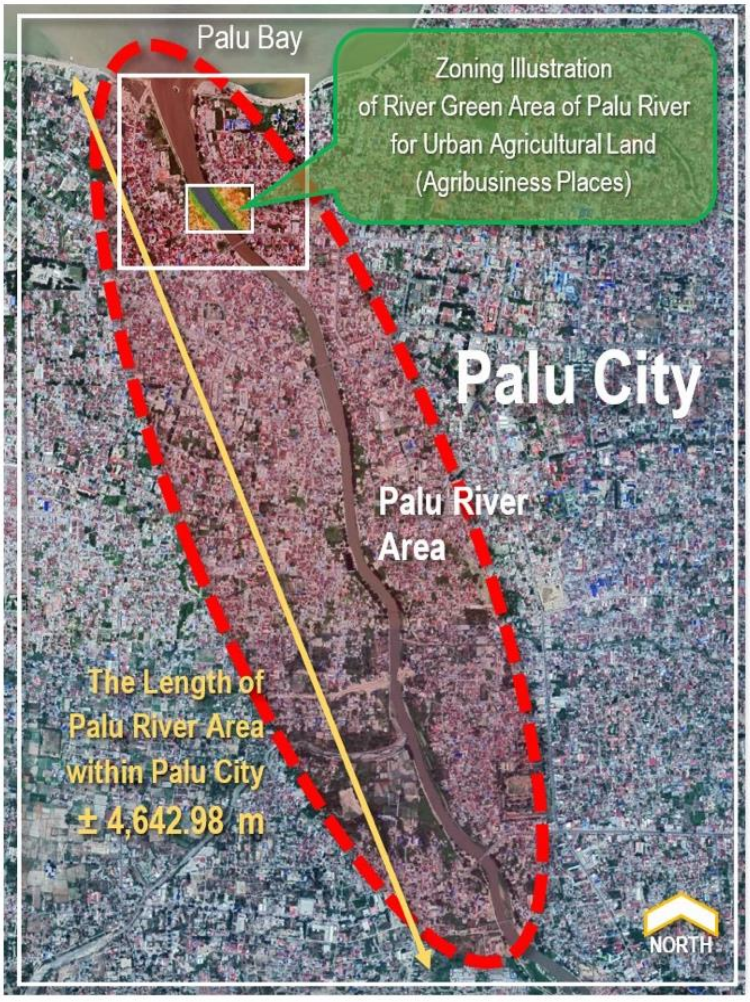

Figure 2. Potential Area for Developing Agribusiness Places on Palu Riversides.
Source: Calculated by Using Satellite Imagery via Google Earth in 2020

The available space on the Palu Riversides which can be used as Sustainable Agricultural Land for the Development of Agribusiness Places, is 23.2149 ha. Area of this size is the allocation of Urban Green Open Space on the Palu Riversides which is referred to as the River Green Area. The availability of space covering an area of 23.2149 ha shows the potential of minimal space that can be used for developing the Agribusiness Places. Figure 2 shows the

potential space for developing this Agribusiness Places on the Palu Riversides in Palu River Area .

Analysis of Legal Aspect

The existence of the Agricultural Land as a place to run urban agriculture on the Palu Riverside for the Development of Agribusiness Places, requires legal aspects. Thus, ensuring the sustainability of this activity can be carried out all the time. The following regulations are a review of the legal aspects of the existence of agribusiness: (a). Law Number 26 Year 2007 concerning Spatial Plan. Article 29 states that green open space consists of public green open space and private green open space. The proportion of green open space (RTH) in the City area is at least 30 (thirty) percent of the City area, and the proportion of public green open space in the city area is at least 20 (twenty) percent of the city area. (Finding 1); (b). Regulation of the Minister of Public Works Number 05/PRT/M/2008 concerning Guidelines for the Provision and Utilization of Green Open Space in Urban Areas. Utilization of the River Green Area which functions as cultivation can be carried out by the community for activities, including the community agricultural cultivation. (Finding 2); (c). Regulation of the Minister of Home Affairs Number 1 Year 2007 concerning Spatial Planning of Urban Green Open Space. Based on this Regulation on Article 6, types of green open spaces in urban areas include urban agricultural land; and the green areas of the rivers, beaches, buildings, ponds, and swamps. It can be seen that urban agricultural land and river green area are part of the urban green open space. (Finding 3); (d). Local Government Regulation Number 16 the Year 2011 concerning Regional Spatial Plan (RTRW) for Palu City 2010-2030. Palu City of Regional Spatial Plan Regulation Article 39 paragraph (3) point b, states that the river green area of Palu river is approximately 25 meters wide from the outer embankment foot. Support the availability of space for urban agricultural land as wide as the required river green area. (Finding 4); (e). The Building Arrangement and Environmental Plan (RTBL) of the Palu Riversides, Palu City, Palu City Government in 2016. Based on this document, the Palu City Government in 2016 has planned to implement the Palu river's boundaries, the river green area of Palu river is 25 meters wide from the outer embankment foot of rivershed to the mainland. (Finding 5).

These five findings support the availability of urban agricultural land for the Development of Agribusiness Places on the Palu Riversides. The following table shows a summary analysis of the legal aspect for the development of agribusiness places on the Palu Riversides.

Spatial Innovation of Sustainable Agriculture for

The Development of Agribusiness Places on Palu Riversides.

The challenge faced by the Palu City Government, is the ability to innovate food production activities from sustainable agriculture in the center of Palu City such as the Palu River Area as an absolute thing that must be done successfully, make Palu City has sufficient green open space with productive food plants (Hamzens and Moestopo, 2018). Here in this study, the suggested starting point for spatial innovation is to create a well-planned area for Agribusiness Places that is the River Green Area on Palu Riversides. Figure 3 shows the zoning of the Palu Riversides area where the Agribusiness Places located in the zone of River Green Area.

The location of the Agribusiness Places on the Palu Riversides is in accordance with applicable laws and regulations. The opportunity to develop Agribusiness Places more broadly in an entire city scale is a next step that needs to be studied to stir the new economic model immediately. The innovation spatial layout of the Palu Riversides Area consists of: (1) Watershed Zone; (2) Riparian Zone; (3) River Green Area Zone; and (4) Support Zone. Figure 4 shows the use of green open space on the Palu Riversides namely River Green Area as Urban Agricultural Land of Agribusiness Places.

Table 2. Summary of Analysis of Legal Aspects for the Development of Agribusiness Places on Palu Riversides

No.	Reference	Findings	Conclusion
1.	Law Number 26 Year 2007 concerning Spatial Plan.	Green open space is at least 30 percent of the city area (Finding 1).	It all support the Development of the Agribusiness Places on Palu Riversides.
2.	Regulation of the Minister of Public Works Number 05/PRT/M/2008 concerning Guidelines for the Provision and Utilization of Green Open Space in Urban Areas.	Utilization of the River Green Area which functions as cultivation can be carried out by the community for activities, including the community agricultural cultivation. (Finding 2)	
3.	Regulation of the Minister of Home Affairs Number 1 Year 2007 concerning Spatial Planning of Urban Green Open Space.	Urban Agricultural Land and River Green Area are part of the urban green open space. (Finding 3)	
4.	Local Government Regulation Number 16 the Year 2011 concerning Regional Spatial Plan of Palu City 2010-2030	River Grean Area on Palu Riversides supports the availability of urban agricultural land (Finding 4)	
5.	Building Arrangement and Environmental Plan for Palu Riverside Areas, Palu City, Palu City Government in 2016.	The Palu City Government has planned to implement a 25 meters wide of River Green Area on Palu Riversides (Finding 5)	

Source: Legal Aspect Analysis Based on Related Law, Regulations and Document.

Figure 3. Shows the Zoning of the Palu Riversides Area Where the Agribusiness Places Located in the Zone of River Green Area.
Source: Analysis by Using Satellite Imagery via Google Earth 2020

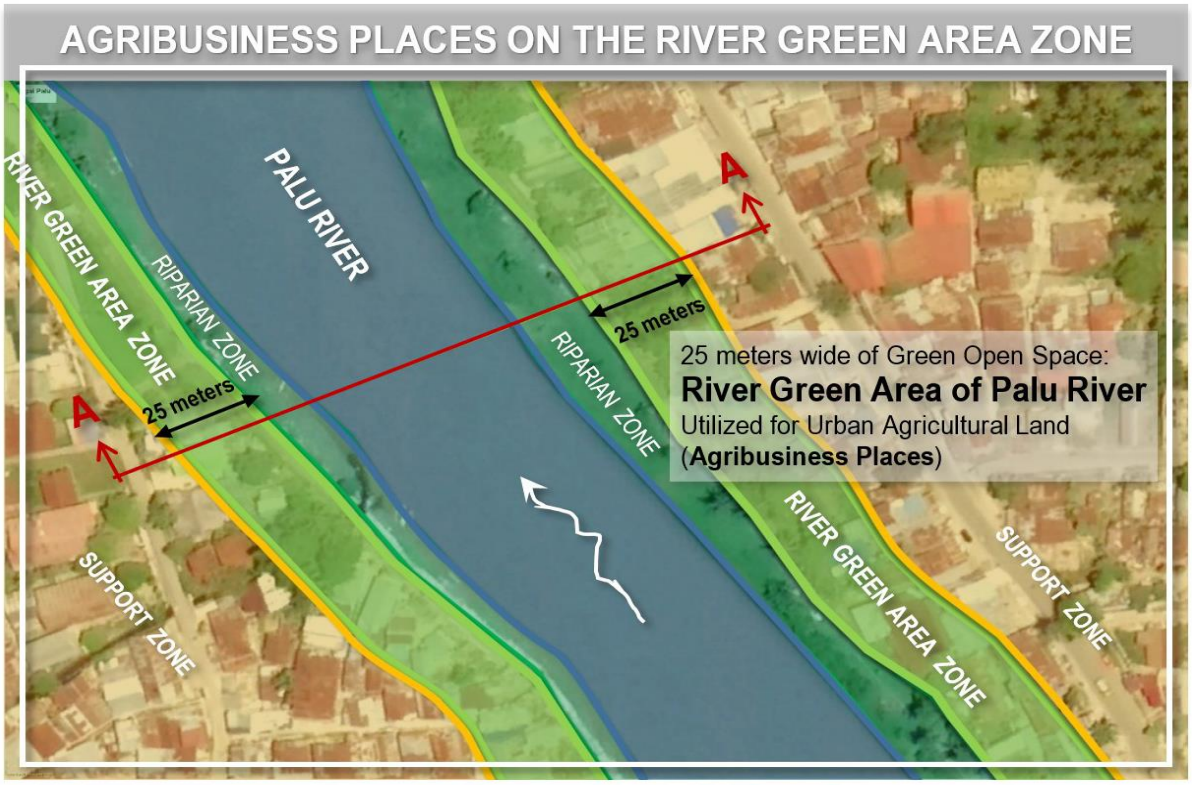

Figure 4. The Utilization of 25 Meters Wide River Green Area of Palu Riversides as Agribusiness Places on the Palu Riversides
Source: Analysis by Using Satellite Imagery via Google Earth 2020

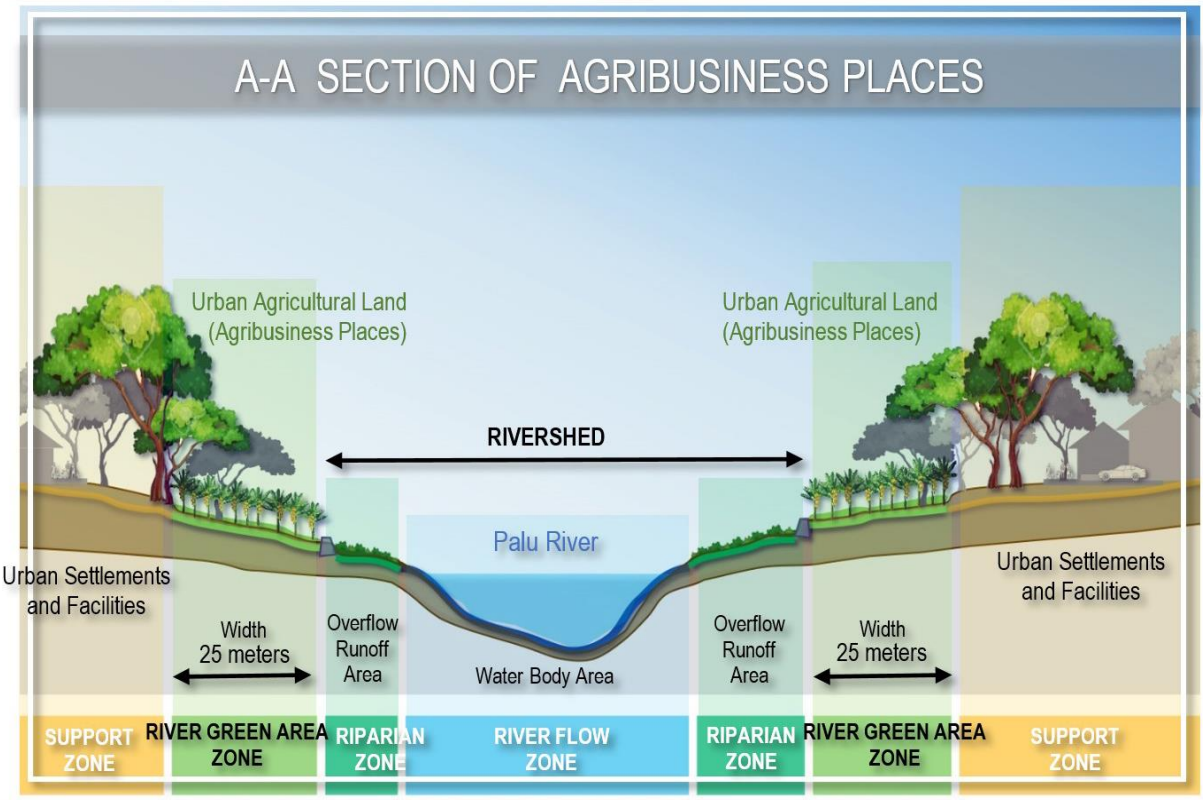

Figure 5. Cross-section of the Innovation Spatial Planning of the Agribusiness Places on Palu Riversides
Source: Study Results Using Satellite Imagery via Google Earth 2020.

How to get green open space in the Palu Riversides Area as Agribusiness Places? This area is very dense. According to Ye Sun and Tomohiro Akiyama (2018), the Agriculture Land Use Right Transfer (ALURT) has begun to encourage the modernization of agriculture needed to face challenges. The new ALURT policy allows farmers to transfer the rights of their agricultural land to others. The use rights transfer model can be studied further for a practical land consolidation innovation to develop Agribusiness Places on Palu Riversides. Figure 5. shows a cross-section of the spatial planning of the Agribusiness Places on Palu Riversides.

The innovation spatial layout of the Agribusiness Places on Palu Riversides consists of: (1) River Flow Zone (Waterbody Area); (2) Riparian Zone (Overflow Runoff Area); (3) River Green Area Zone (Urban Agricultural Land for Agribusiness Places); and (4) Support Zone (Urban Settlements and Facilities).

CONCLUSION

Palu Riversides have the potential to become one of the landmarks of the Palu City. Sustainable urban agricultural development opportunities through agribusiness activities can be broadly carried out on a city scale. The available Urban Agricultural Land is 23.2149 ha, that potentially used as Agribusiness Places on the Palu Riversides. It can be used as sustainable urban agricultural land for the agribusiness places.

The analysis was carried out based on the legal aspects. The study of related documents shows provision support to sustainable urban agricultural development, particularly to create Agribusiness Places on the Palu Riversides. The innovation spatial layout of the Agribusiness Places on Palu Riversides consists of: (1) Water Body Area; (2) Overflow Runoff Area; (3) Urban Agricultural Land for Agribusiness Places; and (4) Urban Settlements and Facilities.

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