

## STRATEGY FOR DEVELOPING HORTICULTURAL AGROTOURISM POTENTIAL IN NAGARI AIE ANGEK, X KOTO DISTRICT, TANAH DATAR REGENCY, WEST SUMATRA

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**ABSTRACT:** This study aims to examine the strategy of the potential development of horticultural crop agrotourism in Kenagarian Aie Angek, X koto District, Tanah Datar Regency. The method used in this study is a descriptive approach, for the analysis of the study is to use SWOT analysis which seeks to find out various internal and external factors from a study studied. From the research that has been carried out and the results of the analysis show that the strategy of horticultural crop development in Nagari Aie Angek, X Koto District, especially farmers who absorb horticultural crops, experience various obstacles such as disruption of horticultural crops from pests and diseases and uncertain climate. However, UPTD Aie Angek horticultural crops continue to strive to cultivate the potential of horticultural agrotourism with various efforts and designs on how horticultural crops can ensure the economy of the community in Aie Angek District, X Koto District, Tanah Datar Regency.

**Keywords:** *agrotourism, farmers, horticultural crops*

### 1. INTRODUCTION

Indonesia is an agricultural country where the majority of the population has livelihoods as farmers. This is supported by the large amount of vacant land that can be used as agricultural land, in addition to the condition of the soil in Indonesia which has good nutrient content so that it can help plant growth. One of the leading horticultural products in the agricultural sector in Indonesia is vegetable crops. Vegetables are one of the horticultural products that are in great demand by the public because they contain nutrients that are beneficial to health. Vegetables can be consumed raw or processed first according to the needs to be used. [18] One vegetable commodity that is needed by almost everyone from various walks of life is chili, so it is not surprising that the volume of circulation in the market is on a large scale.

Tanah Datar Regency is an area that has potential in the agricultural and plantation sectors, one of which is for areas in the highlands. Geographically, Tanah Datar Regency is located at the foot of Mount Merapi, so this is also Tanah Datar Regency which is on a plateau has soil content that supports plant needs. [4] And X Koto District is one of the sub-districts located in the highlands and this area is very supportive of agriculture and plantations, one of which is

horticultural crops[11]. Horticultural crops are a cultivation of plants in a modern way ranging from seeding, seeding, tissue culture, crop production, pests and diseases, harvesting, and processed products [5]. Horticultural products are one of the agricultural commodities that have the potential and opportunity to be developed, not only that horticultural crops are superior products that can improve the welfare of farmers in Indonesia, both horticultural products classified as fruits, vegetables, medicines and ornamental plants [5].

At present the knowledge and interest of urban people in agriculture and plantations is less desirable, and there needs to be a new innovation in education and recreation involving agriculture and plantations in order to overcome these problems. Agrotourism is an activity or activity that involves an agricultural land in which the community gets education, recreation, space experience in the natural environment directly. This aims to make the importance of knowledge about the environment as well as the preservation of natural resources and the importance of consumption of horticultural crops for health [19]. Nagari Aie Angek is one of the Nagari located in X Koto District with most of the area at the foot of Mount Merapi or in the highlands, Nagari Aie Angek has land potential for the agricultural and

plantation sectors or horticultural crops, this is based on most of the Nagari Aie Angek people are vegetable and fruit garden farmers [11]. The high agricultural and plantation sectors for the region also cause something, namely how to arrange the agricultural areas of farmers in order to create a good space that can be exposed to the community so that people can get to know about agriculture in the form of agrotourism by utilizing the agricultural potential of the population [21].

Agrotourism is a tourist activity that involves the use of agricultural land or related facilities that attract tourists. Agrotourism has a variety of variations, such as mazes, picking tours, to restaurants on the sea. Agrotourism is one of the potentials in the development of the tourism industry throughout the world [14]. Agrotourism is the answer in teaching the wider community about the importance of agrarian areas, Agrotourism itself is very important for travel entertainment objects that use agriculture as an entertainment destination [15]. In general, the idea of agrotourism is a journey combined with agricultural elements that refer to the recreative component that has become the hallmark of a tour. [16-17]. Agrotourism as a form of tourism activity that utilizes agro tourism as a tourist attraction is very in line with developments in this region [3]. As is known that agrotourism is tourism that highlights a natural environment, so the potential for horticultural cultivation plays an important role in this as a form of agrotourism development in agricultural and plantation areas [14].

## 2. METHODS

The method that the author uses in this study is qualitative research methods. The data analysis used is using SWOT analysis. The purpose of this article writing study is to determine the factors of horticultural agrotourism development in Aie Angek nagari and find out the strategy of horticulture-based agrotourism development in the Aie Angek area, X koto district, Tanah Datar Regency.

Data collection and problems are seen from the existence of various potentials and prospects for agrotourism, various issues about the existence of agrotourism [2]. After the problem is obtained, a planning and design analysis is carried out, which identifies existing problems based on the design concept. Interviews, observations and documentation studies are the methods used to collect data [20]. Data processing related to horticultural development potential in Nagari Aie Angek will be analyzed from secondary data obtained or found in the field described in the form of descriptive analysis on the strategy of developing horticultural agrotourism potential in

Nagari Aie Angek, X Koto District, Tanah Datar Regency.

## 3. RESULTS AND DISCUSSION

### 3.1 Nagari Aie Angek as Nagari Horticultural Agrotourism

Nagari Aie Angek is one of the Nagari located in X Koto District with most of the area at the foot of Mount Merapi or in the highlands, Nagari Aie Angek has land potential for the agricultural and plantation sectors, this is based on most of the Nagari Aie Angek people who are vegetable and fruit garden farmers [11]. The high agricultural and plantation sectors for the region also cause something, namely how to arrange the agricultural areas of farmers in order to create a good space that can be exposed to the community so that people can get to know about agriculture in the form of agrotourism by utilizing the agricultural potential of the population.

In the daily news of Kompas, the Nagari Aie Angek area is an area that has great potential regarding horticultural crops such as vegetable and fruit crop farming, this ornamental plant is based on the soil content in Nagari. The zoning of the agrotourism area for Nagari Aie Angek, X Koto District is  $\pm 160$  ha [22]. Based on information obtained from Nagari's profile, and for the number of farmers in the area, which amounted to 96 people, who had agricultural land spread in the upper area around Mount Marapi [18]. For zoning, the designation of the Nagari Aie Angek area has a tourism zoning pattern that has been determined to be developed as agrotourism by the Regional and City Spatial Planning, namely with an area size of  $\pm 6.5$  ha, assuming the calculation of the number of farmers there is around  $\pm 12$  people, with each person having an area of 2ha [13].

Location of zoning designation for agrotourism development in Nagari Aie Angek area according to City Spatial Planning:

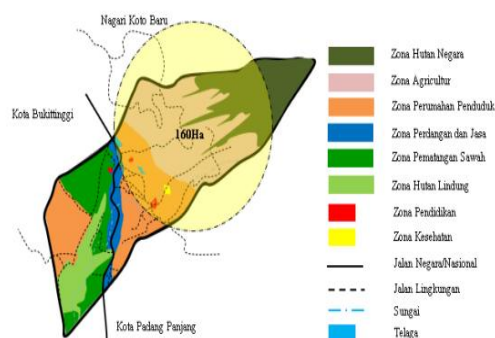


Fig 1. Agricultural Agrotourism Utilization Zone

The spatial scope for agrotourism, horticulture, agriculture and plantation planning in Nagari Aie Angek, X koto Kabupataen Tanah Datar District.

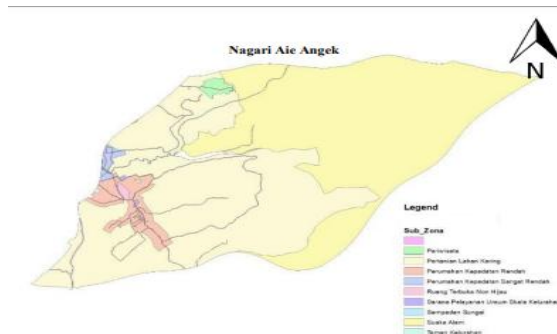


Fig 2. Aie Angek Utilization Zoning Block

Spatial analysis aims to obtain space needs from various types of activities that will be accommodated in Aie Angek Horticultural Agrotourism. Aie Angek Horticultural Agrotourism requires a room that can accommodate the basic pattern of agrotourism activities itself, namely the pattern of planting-picking-selling activities.

### 3.2 Horticultural Agrotourism Potential in Aie Angek District, X Koto District

Nagari Aie Angek as an agricultural area in the form of agriculture that has the potential for horticultural crops that are quite good to be used as agrotourism because the layout of the area is quite strategic, which is located on the slopes of Mount Merapi. So that the development of agrotourism in Aie Angek leads to the direct natural sector, namely in the form of agriculture and plantations, especially agriculture in the form of horticultural crops which can be said to have an average of 90% livelihoods as farmers based on interviews with the device of the guardian of the nagari and secretary of KAN Nagari Aie Angek, and only 10% have livelihoods other than farmers. And this is all certainly a source of economic income for the community and as an agrotourism potential as well as to introduce the natural wealth of the Aie Angek area itself.

As a resource for improving the community's economy, horticultural agrotourism can also be a promotional medium for local products, and help regional developments in marketing businesses and creating added value and "direct-marking" stimulating economic activities and providing benefits to people in the region. [24] In planning and designing horticultural agrotourism in Aie Angek must consider the following, the first is in accordance with the RUTRK of Aie Angek Registry [11] and the Aie Angek area located at

the foot of Mount Merapi is quite attractive agrotourism potential, so that visitors can enjoy the view from inside and outside as an agrotourism area where public transportation access is quite easy, so that reaching the location is not difficult [7-8].

Based on the results of interviews with the management, some horticultural crops that are cultivated and managed by the local community are managed by joining farmer groups in the area, and some are managed individually or each of the farmers who own land. Managers or farmers also said that the area of land they cultivate is quite fertile because the vulkanik activity of Mount Merapi provides fertility for the land on the slopes of Merapi [12]. The vomit material from the Merapi eruption contains many nutrients, especially phosphorus and potassium. The fertility of this area is used by the people of Aie Angek to grow various crop commodities, one of which is Horticulture.

Many things and efforts are made by the local community to develop horticultural potential to become an agrotourism potential that can be an attraction for tourists besides being the main source of income for farmers in Aie Angek district[19], along with the efforts made by land actors in cultivating horticultural crops:

- 1) The selection of soil media must be appropriate so that plants can grow well
- 2) Seeding should be carried out with quality seeds
- 3) Carry out regular watering
- 4) Providing organic fertilizer to optimize the growth of horticultural commodities
- 5) Pruning if there are dead plant parts, so as not to spread more widely
- 6) Monitor plants regularly, so that there are no pests and diseases and if there are immediately overcome
- 7) Carry out harvesting, in time to get good results.

Agricultural potential is business and economic in the agrotourism area, namely in the form of various horticultural crops planted by the community, such as chili, col, mustard, tomatoes, chickpeas, eggplants, leeks (leeks), and others. Potential that is business and economic because it is related to trade business [11].

Based on the results of interviews with horticultural crop farmers as well, and incidentally the horticultural crops he cultivates are quite diverse, but as part of the horticultural crops that farmers will explain here are chili plants. [9] the cultivation techniques of horticultural crops such as chili peppers consist of several stages: seed procurement, tillage, planting, plant maintenance, pest and disease control, as well as harvesting.

### 1. Seed Procurement

One of the factors that need to be considered in cultivating horticultural crops is the use of superior and quality seeds [1]. Related to horticultural crop seeds used by farmers is different between farmers who manage their own land and farmers who are members of farmer groups, because farmers who are members of farmer groups will certainly get seeds first compared to farmers who manage their own land, as well as the types of seeds that will be used differently. And the procurement of seeds carried out at UPTD Perbibitan Horticultural Plant Aie Angek was not carried out because UPTD bought seeds that were ready for planting from nursery farmers in Bandungan[23]. The seeds purchased are seeds that are ready for planting, the age of chili seedlings is about 21 days. When using seeds, the seeds needed are 1 pack of seeds measuring 10 gr.

### 2. Tillage

Tillage at UPTD Perbibitan Horticultural Plant Aie Angek uses MPHP instead of conventional means. The land used is land that was previously used to grow other horticultural crops as well. Cultivating the soil is done to create good tillage properties, and this property reflects the physical condition of the soil that is suitable for plant growth [24]. The main purpose of tillage is to provide a good growing medium for plant survival. In addition, tillage can help improve drainage so that water is easily flowed, remove toxins in the soil by turning the soil so that evaporation occurs and kills or cuts the life cycle of weeds.

### 3. Planting.

Planting chili plants at UPTD Perbibitan Horticultural Crops Aie Angek is carried out in February-March. The chili seeds to be planted are chili seeds purchased from seedling farmers in Bandungan who are about 21 days old and have 4-6 leaves. Before planting, seedlings that are still in the polybag are watered with water first, watering is done so that the seedlings are easy to take so as not to damage the root system. Selection of seedlings needs to be done before planting seedlings. This is done so that the planted seedlings are really healthy, normal and vigorous seedlings. After the seedlings are ready, they are carefully taken out and planted in holes that have been prepared in advance.

### 4. Plant Maintenance

After planting, the next activity is maintenance. Chili seedlings that have been planted are well preserved until harvest. At this stage attention and free time are needed to supervise and maintain the plant. If proper maintenance is not followed, the quality of chili plants will certainly decrease. Maintenance of chili plants carried out at UPTD Perbibitan Horticultural Crops Aie Angek includes watering, diving, installation of ajir, wiwilan, follow-up fertilization, weeding and pest and disease control.

### 5. Pest and Disease Control

The presence of pests and diseases in the field is equally detrimental because it can reduce the production of chili plants. Pest and disease control at UPTD Perbibitan Horticultural Plant Aie Angek was carried out late. Handling is carried out when chili plants have been attacked by pests and diseases. Handling is carried out using Marshal pesticides and Dithane M-45. This delay in handling is one of the factors in the decline in the quality of chili planted so that failure occurs.

### 6. Harvesting

Harvesting and post-harvest handling are the final stages of chili cultivation. The success of harvesting and post-harvest handling is also inseparable from the beginning of cultivation, such as planting and maintenance until finally arriving when harvested. Harvesting hot peppers needs to be carried out in a timely manner, technique, thoroughness and patience. Harvesting too quickly will result in less than optimal chili quality. Likewise, if it is too late, the quality of chili will decrease due to rot and easily damaged. Harvesting chili peppers is done after the plants are 2.5 months to 5 months old. Harvesting time should be done in the morning after the dew or water runs out from the surface of the fruit skin. This is so that the picked fruit is not contaminated by spoilage microbes. Therefore, a good way to harvest chili is by picking fruit with the stalk carefully when the weather is bright [9-10].

The few results obtained are due to late handling carried out when plants are attacked by pests and diseases and this causes plant growth to be inhibited, many plants wither and die so that the fruit produced cannot develop optimally. In addition, the ongoing rainy season at the time of planting also affects the quality of the fruit produced. Fruits are smaller than usual [24].

### 7. Postharvest

Post-harvest handling is the last door to production. Good post-harvest handling will



reduce the percentage of damage or loss after harvest. After harvesting is completed, the crop is put into containers, then collected in a shaded place. Crops are avoided from direct sunlight. The harvested chili is handed over directly to traders around UPTD Perbibitan Horticultural Plant Aie Angek and sorted first. After harvesting ends, chili plants that are in the planting field are uprooted and burned. [6] The goal is to avoid the spread of the virus so as not to spread to other plants around the chili field. The installed mulch is left on the field, then sprayed bactericidal and fungicidal spray. After spraying, the field is left for  $\pm$  1 week.

In addition to several stages of what farmers do in the stage of developing the potential of horticultural crops, based on SWOT analysis which in principle is to examine in depth internal factors related to strengths, weaknesses, and external factors related to opportunities and threats (theats). The following can be concluded the factors that influence the development of horticultural agrotourism potential in Kenagarian Aie Angek:

1. Internal Factors of Strength
  - a) Availability of production facilities
  - b) The yield quality of horticultural plants is good
  - c) Production results are there every day
  - d) Sales of production products through toke and market
  - e) Easy access to capital
2. Internal Factors of Weakness
  - a) Supervision of the seeds used is still weak
  - b) The ability of farmers to use technology is still lacking
  - c) There has been no further processing of the production results
  - d) There are still less active peasant institutions
  - e) Facilities in the market where sales are still lacking
3. External Factors of Opportunity
  - a) Market demand for horticultural plants, especially red chili, is quite high
  - b) Climate and soil suitable for the cultivation of horticultural crops
  - c) The existence of technology that helps in cultivation
  - d) Processing of horticultural plants into other products
  - e) Open financial institutions for farmers to obtain capital

4. External Factors of Opportunity
  - a) OTP attacks, in the form of pests and other diseases.
  - b) Competition with other regions
  - c) No price guarantee yet
  - d) Le prix des cultures horticoles qui se fcultent, en particulier les piments rouges

#### 4. CONCLUSION

The management of the potential of horticultural crops as agrotourism for Aie Angek is certainly inseparable from various obstacles and influences that will hinder the management process from the seedling stage to even post-harvest, such as in the cultivation of chili horticultural crops are limited in time, energy, and cost, as well as pests that attack chili plants. So from various kinds of internal and external factors that become obstacles, plant care needs to be improved so that cultivated plants can grow well, especially prevention of pests and diseases. Because delays in handling pest and disease attacks are one of the factors in the failure of red chili cultivation. And in the cultivation of horticultural crops, especially red chili, it should pay attention to the season as well so that the expected results can be achieved.

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