Analysis of the contribution of income in fulfilling household livelihoods of coastal communities

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Abstract. The uncertainty of economic conditions which limited the employment opportunities has caused stability in family income. This condition has encouraged many coastal communities to diversify their work to increase income. Job diversification can provide a substantial contribution to meet household needs during the dry season. This study aims to determine the contribution of income made by coastal communities to support their household needs. This research was conducted in Punaga Village, Mangarabombang District, Takalar Regency. The results of this study indicated that the type of work carried out by coastal communities is rice cultivation and seaweed, which have so far significantly contributed to household life although the harvest is obtained in the rainy season and seaweed is harvested every 45 days after planting. Other sectors such as non-rice and non-agriculture contributed significantly to increase household income such as raising livestock, civil servants, employees, and others. Expenditures are mostly spent on farming costs and daily expenses such as consumption. The coastal community has 100% implemented a dual livelihood pattern to meet their needs, which contributes significantly to meet their needs and to build a more decent life.

1. Introduction
Coastal communities generally have become part of a pluralistic society but still have a shared spirit. It means that the average coastal community structure is a combination of characteristics of urban and rural communities. Since the structure of coastal communities is very plural, it can form a system and cultural values in cultural acculturation. Its each component forms the structure of the community [1].

The income of people in coastal areas tends to be changeable and dependent on the season. The people normally work as fishermen for a living. However, they find it difficult to go to the sea during the rainy season. Thus, some of them decided to use land resources to plant rice. This condition shows that their work is severely risky. This is caused by the low quality of technology possesse [2,3].

Most coastal communities depend on marine resources. The sea is a natural resource that is accessible so anyone can access it. This accessible resource has made the competition between the fishers even harder. Such environments generally form harsh characters in fishers or coastal residents, moreover, with very high occupational risks in life safety [4].

Household in the economic sense means a family unit, in which there are actions to manage family economic activities, the division of labor and functions, then how much income is obtained or consumption as well as the types of products and services produced. The higher the number of families, the more excellent the opportunity to provide earner income in a family. The results of
Handayani’s research [5] showed a positive correlation between the number of income seekers and the level of income. The contribution of income from one type of activity to total household income depends on the productivity of the factors of production used from the type of activity concerned. The stability of household income tends to be influenced by sources of income. Types of income from outside the agricultural sector are generally not seasonally related and can be done at any time of the year [6].

There are many heads of families in Punaga village. Some of them work as farmers, fishermen, seaweed businesses, fish farmers and tourism businesses. Some families undergo two or more jobs at once to fulfill their survival. Based on the vast potential land area that can be utilized and processed as a source of livelihood, the area of paddy fields in Punaga Village, Mangarabombang District, Takalar Regency on table 1.

Table 1. Area of paddy fields

| Village name | Land area (Ha/Km²) | Total |
|--------------|--------------------|-------|
|              | Sawah | Dryland/garden |       |
| Punaga       | 392.3 | 3496.6         | 3888.9 |
| Malelaya     | 58.4  | 1571.1         | 1629.5 |
| Barugaya     | 425.0 | 1316.1         | 1741.1 |
| Tamalabba    | 504.0 | 1917.9         | 2421.9 |
| Jumlah       | 1379.7| 8301.7         | 9681.4 |

Based on table 1, the area of land in Punaga village in 4 sub-villages is Punaga sub-village with an area of 3888.9 ha / km² divided into 392.3 ha / km² of rice fields and 3496.6 ha / km² of dry land, Malelaya hamlet with land area 1629.5 ha / km² divided into 58.4 ha / km² of rice fields and dry land 1571.1 ha / km², Barugaya hamlet with land area of 1741.1 ha / km² divided into 425 ha / km² of rice fields and dry land 1316.1 ha / km², and Tamalabba hamlet with an area of 2421.9 ha / km² divided into 504 ha / km² of paddy fields and 1917.9 ha / km² of dry land. The area of paddy fields and garden area in Punaga Village is 1379.7 ha / km² and 8301.7 ha / km² of the total area of Punaga village which is 15.75 km². The potential of this land is mostly utilized by the community of Punaga village to carry out farming activities and as a source of livelihood.

Based on this brief review, Punaga Village is a coastal area inhabited by people who have a lot of potential both land and marine resources. The author took the object of coastal community research, in this case, the community whose main job is working as a rice paddy farmer. For this reason, this research examined the contribution of income from the work carried out by coastal communities in the paddy farmers to obtain household livelihood sustainability after the planting season to meet their needs by utilizing and seeing the potential of extensive resources, social relations, and economic systems.

2. Methods

2.1. Research location and time

This research was conducted in Punaga Village, Mangarabombang District, Takalar Regency. The time of the study began in April 2019.

2.2. Population and respondents

The population in this study took the object that is rice farmers who do household income fulfillment activities. The number of farmers in Punaga Village is 115 farmers spread over four hamlets. The sample was 30 respondents taken randomly of 25% of the population.
2.3. Data analysis method

According to Basrowi [7], descriptive analysis is a study used to determine the value of independent variables, either one or more variables (independent) without making comparisons or connecting with other variables, such as describing the characteristics of the socio-economic conditions of the respondents consisting of the education of respondents, farming experience, age, land area of livelihood strategies carried out by households in meeting their needs. According to Fatmasari[8], quantitative descriptive is a study by obtaining data in the form of numbers or qualitative data that is explored by calculating income, revenue costs, and revenue contributions.

3. Results and discussion

Contributions are offering which made in the form of massive subvention to something. For example, the contribution of income is significantly obtained from a job in meeting the needs of daily life. Revenue contribution can assess whether or not the income earned is sufficient for expenses incurred by the household. In this study, researchers examined the pattern of income fulfillment of coastal communities and have a scheme in determining the contribution of income in one household. The household expenditure is illustrated in table 2.

| Expenses           | Average (IDR) | Percentage (%) |
|--------------------|---------------|----------------|
| Fertilizer costs   | 508,667       | 40.52          |
| Pesticide Costs    | 70,400        | 5.61           |
| Labor costs        | 338,000       | 26.92          |
| Rental costs       | 338,333       | 26.95          |
| **Total**          | **1,255,400** | **100.00**     |

Based on table 2, the costs incurred by the paddy farmers in the village of Punaga in one production are fertilizer costs IDR 508,667 with a percentage of 40.52%, pesticides costs IDR 70,400 with a percentage of 5.61%, labor costs IDR 338,000 with a percentage of 26.92%, and a rental fee of 338,333 with a percentage of 26.95%. It can be said that the most significant costs incurred by farmers are on fertilizers. Fertilizer plays an [2] important role in plant growth because it provides nutrients to plants during the process of growth and development. The following table illustrates the monthly household expenses.

| Expenses            | Average (IDR) | Percentage (%) |
|---------------------|---------------|----------------|
| **Consumption**     | **586,167**   | **56.82**      |
| Health              | 16,667        | 1.62           |
| Tax                 | 71,800        | 6.96           |
| Transportation      | 357,000       | 34.61          |
| **Total**           | **1,031,634** | **100.00**     |

Based on table 3, the costs incurred by the household in one month consist of consumption costs IDR 587,167 with a percentage of 56.82%, health costs IDR 16,667 with a percentage of 1.62%, tax fee costs IDR 71,800 with a percentage of 6.96%, and transportation costs IDR 357,000 with a percentage of 34.61%. It can be concluded that consumption costs are the biggest costs because one of the welfare factors is sufficient food to meet the nutrition of household members. The amount of consumption costs is greatly influenced by the number of household members as well as the needs and size of household income due to a high sense of responsibility.
Expenditures in the household are beneficial to notice the extent of income earned to meet various household needs both for personal and other purposes. The number of household members strongly influences the expenditure of one household. It means the more household members, the more expenditure will be issued. Most household expenditure is spent on children. The children are still thinking about playing and shopping because they are still at the stage of development and pursuing education. However, the amount of income is also very influential on household spending or expenditure activities because the income will be higher as well as the need. The following table illustrates the contribution of income from various sources of income made by farm households. The researchers divide it into several sectors of income sources.

| Table 4. Income contribution to households of coastal communities |
|---------------------------------------------------------------|
| Average | Source of income (IDR) | Percentage (%) |
|---------|------------------------|----------------|
| Paddy   | 8,616,667              | 45.96          |
| Seaweed | 5,903,333              | 31.48          |
| Non rice| 1,153,333              | 6.15           |
| Non Agriculture | 3,076,667  | 16.41          |
| Total   | 18,750,000             | 100.00         |

Based on table 4, the source of income of the farmers derives from rice earns IDR 8,616,667 with a percentage of 45.96%, seaweed earns IDR 5,903,333 with a percentage of 31.48%, non-rice earns IDR 1,153,333 with a percentage of 6.15%, and non-agriculture earns IDR 3,076,667 with a percentage of 16.41%. It can be concluded that the most significant income contribution made by farmers in Punaga Village is from rice because the majority of people work as farmers in supporting their families. Farmers in this area only do rice farming once a year. Additionally, some farmers also do seaweed farming with a reasonably large income in helping the household economy. The non-agricultural sector and non-rice yields carried out by several groups of farmers provide a relatively small income contribution compared to other income in the Punaga village community.

Based on the results of the income contribution, the fulfillment of household needs or livelihoods can be achieved by utilizing various resources owned in the area. These sources of income can be done at any time depending on the ability and season.

4. Conclusions
Farmer communities in Punaga village, Mangarabombang District Takalar Regency, are still dependent on rice farming and seaweed, which provide a significant contribution to household income. Meanwhile, the non-rice and non-agricultural income sectors participate in helping the household economy even though their contribution is smaller than rice farming and seaweed.

References
[1] MTH H and Artini N W P 2009 *Kontribusi Pendapatan Ibu Rumah Tangga Pembuat Makanan Olahan Terhadap Pendapatan Keluarga* (Universitas Udayana)
[2] Basrowi and S J 2010 *Analisis Kondisi Sosial Ekonomi dan Tingkat Pendidikan Masyarakat Desa Srigading, Kecamatan Labuhan Maringgai, Kabupaten Lampung Timur* (Universitas Lampung)
[3] Setyaningrum E W, Maghdalena, Dewii A T K, Yuniartika M and Masithan E D 2019 Coastal ecosystem model based on environmental suitability and carrying capacity of the fishpond in Banyuwangi Region, East Java, Indonesia Coastal ecosystem model based on environmental suitability and carrying capacity of the fishpond in Banyuwangi Re *IOP Conf. Ser. Earth Environ. Sci.* 236 1–15
[4] Dewi F 2010 *Analisis Sosial Ekonomi dan Budaya Masyarakat pesisir Desa Waruduwur*,
Kecamatan Mundu, Kabupaten Cirebon (IAIN Syekh Nurjati Cirebon)

[5] Anon Profil Desa Punaga Kecamatan Mangarabombang Kabupaten Takalar vol 2017

[6] Ravik S 2001 Pemberdayaan Masyarakat Petani dan Nelayan Kecil (UNS)

[7] Yudi W 2015 Sistem Sosial Ekonomi dan Budaya Masyarakat Pesisir (INSTITUT PERTANIAN BOGOR)

[8] Widodo S 2009 Strategi nafkah rumah tangga nelayan dalam menghadapi kemiskinan J. Kelaut. Indones. J. Mar. Sci. Technol. 2 150–7