

# Increased Income of the Head of Cassava Farmers Working in the Cracker Industry in Meeting Basic Needs

Sudarmi\*, Edy Haryono, Nani Suwarni, Febry Eko Santoso  
*Department of Geography Education, University of Lampung, Indonesia*  
*Corresponding Author\**

**Abstract:** This research examines the increase in income of the cassava farmer's heads who work in the cracker industry in Srikaton Village, Seputih Surabaya District, Central Lampung Regency. The method used in this research is descriptive, with a population of 25 heads of cassava farmer families who are overall respondents in the research. Data collection techniques in this study are observation, interviews and documentation. The study results indicate that: 1) The area of agricultural land cultivated by the head of a farmer family reaches an average of 0.51 ha. 2) A total of 16 (64%) heads of families Cassava farmers have income below average. 3) 25 farmer family heads work in the cracker industry and earn  $\leq$  IDR 2,250,596. 4) The 25 farmer family heads who work in the cracker industry experience increased income with the highest percentage increase in 548%. 5) The 25 farmer family heads who work in the cracker industry can meet their basic needs.

**Keywords:** income, cassava, cracker industry.

## I. INTRODUCTION

Agriculture is one sector of economic activity that the government prioritises to improve the economy through agricultural productivity in improving the community's welfare (da Silva, Prasad, & Diniz-Filho, 2017; Darko, Palacios-Lopez, Kilic, & Ricker-Gilbert, 2018). In general, people who live in rural areas have the characteristics of a uniform type of livelihood. This condition is similar to the head of the family's livelihoods in Srikaton Village, Seputih Subdistrict, Surabaya, Central Lampung Regency, namely farmers. The type of agricultural commodity that is developed in Srikaton Village is cassava.

Srikaton Village has an area of 723.10 Ha, used for farming, covering 569 Ha. The total population of Srikaton Village in 2018 is 3,767 people consisting of 1,125 heads of families, with some of the population working as farmers as much as 68.53% or a total of 771 heads family (Hayati, 2020). Based on preliminary research on March 2, 2019, the results of interviews with 5 farmer family heads who work in the cracker industry in Srikaton Village, can see that their income from the results of the farming they did for one month was unable to meet their daily needs, this was due to the price selling cassava is unstable and is classified as still very low, namely IDR 1000 1 kilogram. For more details, we can see cassava farmers' income in Table 1.

Table 1: Incomes of Cassava Farmer Family Heads Who Work in the Cracker Industry in Srikaton Village, Central Lampung Regency

No	Name	land area (ha)	produce (Ton)	Net income (IDR/year)	Net income (IDR/month)
1	Jarwo	0,47	9,2	9.200.000	766.000
2	Badar	0,30	6,4	6.400.000	533.000
3	Dwi	0,25	6,0	6.000.000	500.000
4	Hendik	0,35	6,8	6.800.000	566.000
5	Wagino	0,50	10,0	10.000.000	833.000
Amount		1,87	38,4	38.400.000	3.198.000
Average		0,37	7,68	7.680.000	639.600

Source: Interview with the head of a cassava farmer family who works in the cracker industry in Srikaton Village, Seputih District, Surabaya, Central Lampung Regency.

It can do that the area of agricultural land owned by five heads of farmer families who work in the cracker industry is an average of 0.37 hectares, the average monthly income from agricultural products is IDR 639,600. This income has not met the standard of living needs set by the Central Lampung Regency government of IDR 2,250,596 so that to meet this need, the community does additional work outside the agricultural sector working in the cracker industry to meet their basic needs. The number of farmers who work in the cracker industry is 25 well-known heads of families in Hamlet 3 and Hamlet 4 Desa Srikaton. Most of the workforce are farmers who live around the cracker industry.

The types of crackers produced consist of several types, namely crackers "rambak", crackers "belit" and crackers "rectangular". In general, the raw materials used for production are the same as using tapioca flour; only the cracker type's production technique has a little. Based on the description, the writer chose to conduct a research entitled "Increasing the income of the family head of cassava farmers who work in the cracker industry in meeting basic needs in Srikaton Village, Seputih Subdistrict, Surabaya, Central Lampung Regency".

## II. METHODOLOGY

The method used in this research is descriptive,

according(Colorafi & Evans, 2016; Nassaji, 2015) is a problem procedure that is investigated by describing and describing the current state of the research object based on visible or apparent facts. This research population is the head of the farmer family who works in the cracker industry in Srikaton Village, Central Lampung Regency, managing 25 workers. Seeing the large population in this study, as many as 25 workers and were able to be fully researched, this study did not take samples. Data learning techniques in this research are: Observation, Interview, and Documentation. The data analysis technique in this research is the proportion.

$$\% = \frac{n}{N} \times 100$$

Information %: The percentage obtained

n: The number of values obtained

(Respondents' answers)

N: Number of Samples

100: Constants (Jonathan, 2006)

### III. RESULTS AND DISCUSSION

#### Geographical situation of Srikaton Village

##### Astronomical Layout

Astronomical location is an area or region based on latitude (parallel) and longitude or the earth's meridian(Chulliat, Matzka, Masson, & Milan, 2017; Ye et al., 2019). Latitude is an imaginary line that circles the earth's surface horizontally, while longitude is an imaginary line connecting the North Pole and the South Pole. Astronomically Srikaton Village is between 4040'30 "LS to 4043" 30 "LS and 105036" 0 "BT to 105038" 0 "BT (Monograph Srikaton, 2019: 5).

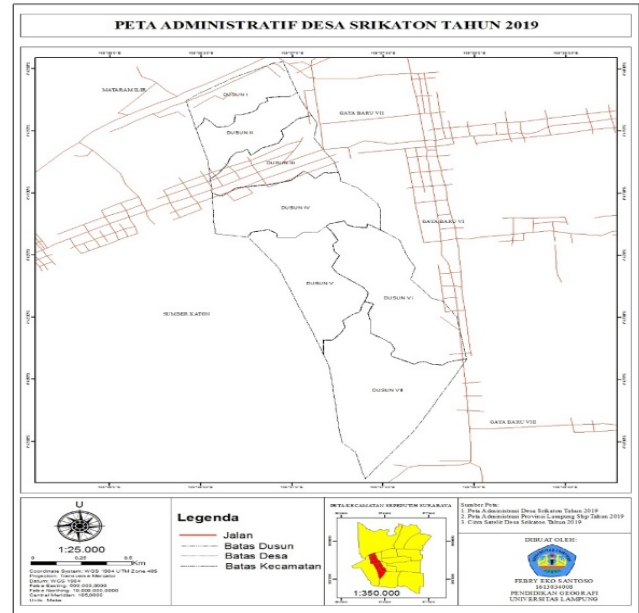
##### Administrative location

Administrative location is the location of an area to the division of governmental areas based on the government's administrative area(Rodríguez-Pose & Garcilazo, 2015; Sahide & Giessen, 2015). Administratively, Srikaton Village borders several villages as follows:

- a. In the north, it is bordered by Mataram Ilir
- b. The South is bordered by Gaya Baru VIII
- c. To the west is bordered by Sumber Katon.
- d. The East is bordered by Gaya Baru VI

For more details, the administrative Location of Srikaton Village, Seputih Surabaya District, Central Lampung Regency can be seen on the following map:

Figure 1: Map of Srikaton Village Administration



#### Topography

The term topography is known as the height of a place on the earth's surface with a certain height (Neumann et al., 2019; Orenge & Petrie, 2018). Srikaton Village is located in a lowland area with an average altitude of 46–48 meters above sea level. The topography of Srikaton Village is relatively flat, so that this area is suitable for use as a residence, agricultural activity, and industrial location.

#### Area

Srikaton Village has an area of 723 ha. The area is used for various community needs, including yards, cultivation, swamps, fields, settlements, schools, village roads, mosques, graves (Monograph Desa Srikaton, 2019: 8) for more details. About land use can be seen in table 1.

Table 1: Land Use in Srikaton Village, Seputih Surabaya District, Central Lampung Regency.

No	Land Use	Land Area (ha)	Percentage (%)
1	Yard	95	13,10
2	Cultivation	543	75,10
3	Bog	24	3,30
4	Field	2	0,20
5	Housing	20	2,70
6	School	3	0,40
7	Village Street	35	4,40
8	Grave	1	0,10
Amount		723	100,00

Source: Monograph of Srikaton Village, Seputih Surabaya District, Central Lampung Regency.

### Socio-Economic Location

Socio-economic location is the location of an area in carrying out economic activities such as markets or shops with the surrounding area (Maydiantoro et al., 2021). The better the relationship and interaction of an area with other regions, the easier it will be to develop when compared to areas that are difficult to reach. Srikaton Village, Seputih Surabaya District, Central Lampung Regency is socially located between two markets, including Pasar Gaya Baru 1, 2 km away and Pasar Rumbia, 9 km away. Access to the two markets is straightforward because Srikaton Village is passed by the provincial road that is passed by public transport.

### Climate

Climate is a condition that characterises an area's atmosphere over a long period. Can expressed it measuring or observing various weather elements in a certain period for at least ten years (D'Amato et al., 2015; Fenner, Meier, Bechtel, Otto, & Scherer, 2017). Based on calculating the Q value using the Zone Type According to Scmidt-Ferguson of 32.2%. It is known that the location of the diagram is between 14.3% to 33.3%. Srikaton Village, Seputih Surabaya Subdistrict, Central Lampung Regency is included in the climate type B (wet) with tropical rain forest vegetation, so it is very suitable for an agricultural area.

### Hydrological Conditions

Srikaton Village, Seputih Surabaya Subdistrict, Central Lampung Regency uses dug well water with an average depth of 7 to 10 meters. Even though the dug well is not too deep, there is always air, even in the long dry season.

### Crackers Industry in Increasing Farmers' Household Income

#### Agricultural land area:

The area of agricultural land referred to in this study is a large area cultivated by the head of a farmer family in Srikaton Village who works in the cracker industry, whether it is his own land or farm labour. The area of agricultural land certainly greatly affects the income obtained from farming. The total area of arable land cultivated by the head of farmers reaches 12.93 hectares with an average area of 0.51 hectares for each family head. To see the area of land owned by the head of the farmer, classification is carried out based on the area of land as follows:

Table 2. Classification of Land Area of Head of Farmers' Family Working in the Cracker Industry in Srikaton Village

No	Land Area (Ha)	Information	Head of Family Farmer	Percentage (%)
1	< 0,50	Narrow	12	48
2	0,50-0,99	Medium	10	40
3	≥ 1,00	Large	3	12
Amount			25	100

Source: Research Data

Table 2 shows that most (48%) of the heads of farmer families who work in the cracker industry in Srikaton Village are small farmers, namely farmers who have a land area of less than 50 ha. The lack of agricultural land they cultivate impacts the less than optimal agricultural yields. By (Imaenyin, 2015; Trukhachev, Ivolga, & Lescheva, 2015), one of the production factors in agriculture is a large land area. The cultivated agricultural crop is cassava that only experiences two harvests in one year. First, the price of cassava is still quite low, namely IDR 1000 one kilogram. Meanwhile, only 3 or 12% of family heads belong to large agricultural landowners; of course, the yields they get are quite large.

### Income from Agricultural Business Products

The income referred to in this study is used to find out how much income the head of the family gets from the main job, namely as a farmer, by calculating the yield multiplied by the price for one year, in one year, the tree can experience twice the harvest period at a price one kilogram, namely IDR 1,000,000. As the main job, being the main source in meeting basic needs, each income that the respondent gets is different. The results of the research in Table 20 can state that the total income of 25 family heads obtained from agricultural business in Srikaton Village in one year reaches IDR 270,900,000, so that it can be seen that the total income each month is IDR 22,644,753 with the income of the closest family head. Reached IDR 1,680,333, and the lowest was IDR 383,330. The level of income from each head of the family's agricultural business is different because the area of agricultural land that is managed varies. Of course, it will have an impact on agricultural production. The classification is calculated based on the average income of one month's work to see the level of income earned. For more details, can see it in Table 3 below.

Table 3: Income Levels of Farmers' Family Heads from Agricultural Businesses Working in the Cracker Industry in Srikaton Village

No	Income Level	Head of Family Farmer	Percentage (%)
1	Below average (< IDR 905,790)	16	64
2	Above average (≥ IDR 905,790)	9	36
Amount		25	100

Source: Research Data

Based on Table 3, we can believe that as many as 16 respondents or 64% of farmers have below-average income. This is due to several factors, including the narrow agricultural land they own and the unstable selling price of cassava. In contrast, the number of respondents who have income above the average of agricultural businesses as many as nine families or 36% who own medium and large agricultural land so that the agricultural results obtained will be better. Family welfare is known from the head of the family's income level that is used to meet basic needs. The Lampung Provincial Government in 2019 has set the

minimum wage for Central Lampung Regency, which is obtained for one month, namely IDR 2,250,596. The income obtained from agricultural products has not been able to meet the standard needs set. Hence, people look for other jobs outside the agricultural sector to increase income, namely working in the cracker industry.

#### *Income from the results of working in the cracker industry*

In this study, the income of the head of the farmer family obtained from working in the cracker industry within one month. There are 25 well-known heads of families in 5 cracker industries in Srikaton Village, the payment system for working for one month, even so. The income earned by the head of the farmer is not the same. This is because there are differences in duties in each job. The amount of income from each cracker industry is the same. The list of work types in the cracker industry is dough making, boiling, cutting, drying, frying, packaging. Even though the production method used in each cracker industry is still simple, the production remains stable so that the income earned every month never experiences any problems.

Based on the research results, the total income of 25 farmer family heads in Srikaton Village who work in the cracker industry for one month is IDR 46,700,000, with the highest income reaching IDR 2,100,000 and the lowest income IDR 1,500,000. This income is the result of work. A side that is pursued to meet the needs of the family. The income level of family farmers who work in the cracker industry can be determined by classifying it based on the Central Lampung Regency government's minimum wage in 2019, which is IDR 2,250,596.

The results showed that all 25 heads of farmer families who work in the cracker industry have low income. This is because the type of work done in the cracker industry has a substantial income depending on its length. Although the income earned from working in the cracker industry is quite large compared to agricultural products, it has not been able to meet the Central Lampung Regency Government's income standard, which is IDR 2,250,596.

If you look at the Head of Farm Family's working hours who work in the cracker industry, 18 out of 25 people (72%) have high working hours. According to the Central Lampung Regency government's standards, the 18 people should have received the minimum wage. To meet these needs, each head of the family manages the agricultural land they have, namely farming cassava. The activities are carried out at empty times before working in the industry, considering that the types of crops cultivated do not really require special care.

#### *Increasing the Income of the Farmers Family Head*

The increase in income referred to in this study is the income of the head of the farmer family from working in the cracker industry divided by the income from cultivated agricultural products and multiplied by 100% for more details, it can see in Table 4 below.

Table 4: Increased income of cassava farmer family heads working in the Srikaton Village cracker industry.

No	Nama	Results of Cassava Farmers' Income (IDR)	Income Results in the Crackers Industry (IDR)	Total income (IDR)	Increased revenue (%)
1	Jarwo	766.000	1.800.000	2.566.000	235
2	Badar	533.000	2.100.000	2.633.000	394
3	Dwi	500.000	2.100.000	2.600.000	420
4	Hendik	566.000	1.900.000	2.466.000	335
5	Wagino	833.000	1.700.000	2.533.000	204
6	Ginanjar	1.375.000	1.700.000	3.075.000	123
7	Kasdi	1.680.333	2.100.000	3.780.000	125
8	Tomo	1.000.000	1.700.000	2.700.000	170
9	Giyatno	608.300	2.000.000	2.608.300	329
10	Sikres	516.600	2.100.000	2.616.600	406
11	Sunardi	558.400	2.100.000	2.658.400	376
12	Suwoto	1.467.000	1.500.000	2.967.000	102
13	Mesijan	1.391.000	1.900.000	3.291.000	136
14	Ahmad	916.660	1.700.000	2.616.660	185
15	Baku	1.750.000	1.900.000	3.450.000	108
16	Dayat	542.600	2.100.000	2.642.600	387
17	Samijan	816.600	1.600.000	2.416.600	196
18	Tugino	1.683.000	1.800.000	3.483.000	106
19	Marioto	475.000	2.100.000	2.575.000	442
20	Sadimin	766.600	1.700.000	2.466.600	221
21	Tiarno	383.330	2.100.000	2.483.330	548
22	Sukanto	683.330	1.600.000	2.283.330	234
23	Agus	1.500.000	1.500.000	3.000.000	100
24	Jepri	750.000	1.800.000	2.550.000	240
25	Rudi	583.000	2.100.000	2.683.000	360

Source: Research Data

The existence of the cracker industry in Srikaton Village has a positive impact on farmers' head, especially in helping improve the economy and welfare of the community. An increase in the income of all heads of farmer families (100%) who work in the cracker industry experienced a high-income increase. Table 4 shows that the increase in income reached 548%, even for the lowest proportion of income increase of 100%. Although the highest household income increase does not mean it can be used as a reference for the highest total income. The magnitude of the increase in income greatly helps the income of the head of the family from the results of their agricultural business, so that it can be stated that if the higher the income from the agricultural business, the smaller the proportion of the increase in income from working in the cracker industry will be smaller.

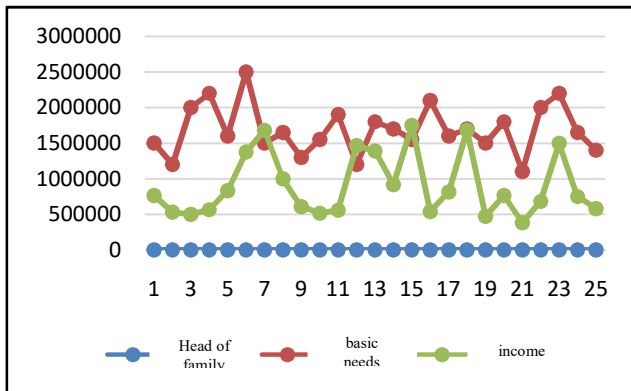


Another benefit felt by the head of family farmers with the search for family welfare is by combining the income from agricultural business results and the income earned from working in the cracker industry to meet the standard family needs set by the Central Lampung Regency Government, namely IDR 2,250,596 monthly.

*Fulfilment of the Basic Needs of the Head of the Farming Family*

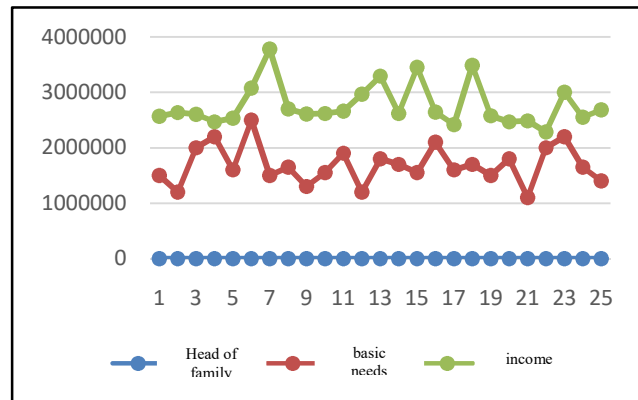
The fulfilment of the basic needs referred to in this research is the ability of the head of a family farmer who works in the cracker industry to meet basic needs, which include nine basic ingredients (Arnesen, 2018; Kerua, 2017), which is calculated in rupiah units based on the expenditure of each head of the family for one month at an unbeatable price. in the field in Srikaton Village, Seputih Subdistrict, Surabaya, Central Lampung Regency. The research results in Srikaton Village showed differences in the head of the family's ability in meeting basic needs between the income obtained from the agricultural sector and the income earned from working in the cracker industry. Fulfilment of basic needs from agricultural income can be seen in Figure 2 below:

Figure 2. Line Graph of Fulfillment of Basic Needs of Agricultural Business Products



Based on Figure 2, it can state that 3 heads of farmer families can meet the family's basic needs from the results of the agricultural business. Still, as many as 22 heads of farmer families in Srikaton Village are unable to meet the family's basic needs. This is because most of the heads of farmer families are smallholders with < 0.50 ha of arable land. The limited agricultural land that is cultivated causes the agricultural products to be obtained not maximally so that the income obtained cannot meet the family's basic needs. To meet these basic needs, the head of the farmer family looks for other alternative jobs outside the agricultural sector, namely by working in the cracker industry in Srikaton Village. To see the fulfilment of the basic needs of the head of the family from the results of working in the cracker industry can be seen in Figure 3 below:

Figure 3. Line Graph of Fulfillment of Basic Needs from Working in the Cracker Industry



The establishment of the cracker industry in Srikaton Village has a positive impact on farmers' heads, especially in increasing family income and welfare. Based on Figure 3, it can be stated that all (25 heads of farmer families) who work in the cracker industry can meet the basic needs of the family, as for the factors that influence the fulfilment of these basic needs, namely the increase in the income of the head of farmers from working in the cracker industry which experienced an increase in income reaching  $\geq 100\%$ . Another influencing factor is the number of family members, which can see from the number of children owned by each head of the family, namely  $\leq$  five people, even there is only one head of a farming family who has four children, but the basic needs of the family are still fulfilled.

IV. CONCLUSION

The total area of agricultural land cultivated by the head of the farmer family who works in the cracker industry reaches 12.93 hectares, and 48% of family heads are small farmers. As many as 16 (64%) heads of cassava farmer families have income below the average, and there are 9 (36%) incomes above the average of IDR 905,790. Twenty-five farmer family heads work in the cracker industry with an  $\leq$  IDR 2,250,596, which is the minimum wage standard for Central Lampung Regency. As many as 25 farmer family heads who work in the cracker industry experience an increase in income, with the highest proportion of increasing income of 548% and the lowest of 100%. As many as 25 farmer family heads who work in the cracker industry can fulfil their basic needs. Based on the discussion of this research, heads of farmer families who have low income from their business can ask them to do some other types of crops to increase their income. It is hoped that the head of farmers who work in the cracker industry will always improve their ability to work by studying each field they are working on so that there will be opportunities to open a cracker industry business itself. It is hoped that the cracker industry owners in Srikaton Village can provide wages by the government's standards because most of the employees have full working hours. It is hoped that the company will improve its production equipment to increase the yield and quality of production.

## REFERENCES

- [1] Arnesen, Edona Emilie. (2018). Holistic sustainability in the restaurant industry: implications of focusing on the social dimension. Norwegian University of Life Sciences, Ås.
- [2] Chulliat, A, Matzka, J, Masson, A, & Milan, SE. (2017). Key ground-based and space-based assets to disentangle magnetic field sources in the Earth's environment. 206(1-4), 123-156.
- [3] Colorafi, Karen Jiggins, & Evans, Bronwynne. (2016). Qualitative descriptive methods in health science research. 9(4), 16-25.
- [4] D'Amato, Gennaro, Holgate, Stephen T, Pawankar, Ruby, Ledford, Dennis K, Cecchi, Lorenzo, Al-Ahmad, Mona, . . . Baena-Cagnani, Carlos E. (2015). Meteorological conditions, climate change, new emerging factors, and asthma and related allergic disorders. A statement of the World Allergy Organization. 8(1), 1-52.
- [5] da Silva, Jose Maria Cardoso, Prasad, Shivangi, & Diniz-Filho, José Alexandre Felizola. (2017). The impact of deforestation, urbanization, public investments, and agriculture on human welfare in the Brazilian Amazonia. 65, 135-142.
- [6] Darko, Francis Addeah, Palacios-Lopez, Amparo, Kilic, Talip, & Ricker-Gilbert, Jacob. (2018). Micro-level welfare impacts of agricultural productivity: Evidence from rural Malawi. 54(5), 915-932.
- [7] Fenner, Daniel, Meier, Fred, Bechtel, Benjamin, Otto, Marco, & Scherer, Dieter. (2017). Intra and inter 'local climate zone' variability of air temperature as observed by crowdsourced citizen weather stations in Berlin, Germany.
- [8] Hayati, Tia Rahmalia. (2020). Pengaruh Reliability dan Promosi Melalui Media Sosial Terhadap Keputusan Memilih Produk Studi pada (Simple Picture Photography) Di Kabupaten Lampung Tengah. Universitas Muhammadiyah Metro,
- [9] Imaenyin, Ntukidiem Inimfon. (2015). Agriculture in Nigeria: identifying opportunities for increased commercialization and investment. 7(1 (26)).
- [10] Jonathan, Sarwono. (2006). Metode penelitian kuantitatif dan kualitatif. In: Graha Ilmu.
- [11] Kerua, William. (2017). Beyond the cocoa farm: A new look at farmers' livelihoods in Papua New Guinea.
- [12] Maydiantoro, Albet, Ridwan, Tusianah, Rias, Kesuma, Tubagus Ali Rachman Puja, Isnainy, Usastiawaty C.A.S, & Zainaro, M.Arifki (2021). Entrepreneurship in Higher Education Curricula: Evidence from Indonesia. Psychology and Education Journal, 58(3), 936-949.
- [13] Nassaji, Hossein. (2015). Qualitative and descriptive research: Data type versus data analysis. In: Sage Publications Sage UK: London, England.
- [14] Neumann, Thomas A, Martino, Anthony J, Markus, Thorsten, Bae, Sungkoo, Bock, Megan R, Brenner, Anita C, . . . Hancock, David W. (2019). The Ice, Cloud, and Land Elevation Satellite-2 Mission: A global geolocated photon product derived from the advanced topographic laser altimeter system. 233, 111325.
- [15] Orengo, Hector A, & Petrie, Cameron A. (2018). Multi-scale relief model (MSRM): a new algorithm for the visualization of subtle topographic change of variable size in digital elevation models. 43(6), 1361-1369.
- [16] Rodríguez-Pose, Andrés, & Garcilazo, Enrique. (2015). Quality of government and the returns of investment: Examining the impact of cohesion expenditure in European regions. 49(8), 1274-1290.
- [17] Sahide, Muhammad Alif K, & Giessen, Lukas. (2015). The fragmented land use administration in Indonesia—Analysing bureaucratic responsibilities influencing tropical rainforest transformation systems. 43, 96-110.
- [18] Trukhachev, Vladimir, Ivolga, Anna, & Lescheva, Marina. (2015). Enhancement of land tenure relations as a factor of sustainable agricultural development: Case of Stavropol Krai, Russia. 7(1), 164-179.
- [19] Ye, Hanlin, Guo, Huadong, Liu, Guang, Guo, Qing, Zhang, Lu, & Huang, Jing. (2019). Temporal sampling error analysis of the Earth's outgoing radiation from a Moon-based platform. 40(18), 6975-6992.