Webology (ISSN: 1735-188X)
Volume 19, Number 2, January, 2022

Employment Opportunities and Women's Revenue in Agricultural Modernization

Hasbi[1], Yusriadi Yusriadi[2]

[1]Universitas Hasanuddin, Makassar, Indonesia

[2]Sekolah Tinggi Ilmu Administrasi Puangrimaggalatung, Makassar, Indonesia
Email: hasbifisip@unhas.ac.id[1], yusriadi.yusriadi@uqconnect.edu.au[2]

Abstract

The paradigm of modernization of agricultural development implementation based on the concept of efficiency has resulted in considerable changes in the farming community, particularly in the economic structure of the village. It also causes signs of disintegration in the division of labor of female farm laborers in agriculture, which threatens to destroy women's production function. This research aims to present diverse (theoretical) opinions regarding the role and opportunity of women farmers and determine the influence of agricultural modernization on job opportunities and earnings of female farmworkers in the farming sector. The research approach used in this study is descriptive qualitative with a case study format. Purposive sampling was used to select informants. At the same time, data collection approaches such as observation and in-depth interviews were used. The findings revealed that agricultural modernization harmed local wisdom. Also impacted job opportunities, and the salary of female farm laborers has decreased. This issue is evident when female farm laborers are now performed by technology and men who work as agricultural machine operators. The decrease in employment opportunities for female farm laborers affects their income as well. Women farm laborers are no longer paid the same as they were before agricultural modernization. Transforming the economic system from a production-oriented to a commercial-oriented one results from the subsystem's production orientation. Because of the fading of a women farm laborer, the sharpening of social stratification, and social polarization, the process of changing social structures marginalizes women farmers.

Keywords: agricultural modernization, economic change, female workers, social stratification, Indonesia

INTRODUCTION

The modernization of traditional agricultural societies is interpreted as if technological advances can absorb it. Rapid progress in the economic and social fields is expected to occur as an immediate consequence of introducing a package of modern techniques into a type of subsistence agriculture.

Although modernization in agriculture has provided many significant benefits for farmers, some things are affected by the more massive modernization, namely the farmworkers who do not have access to the agricultural sector. Modernization of agriculture is like two sides of a coin that have positive and negative sides. In contrast, the positive side of modernization can make it easy for farmers to cultivate their agricultural land; besides, the advantage of this modernization is the increase in agricultural output produced by farmers.

The negative impact of modernization is the change of agricultural tools. The device used to carry out

agricultural activities from the beginning, replacing buffaloes with tractors as a means of land treatment, replacing Erek with a thresher machine, finally changing mortar with a rice milling machine (huller). One study estimates that rice mills replace 125 million Workers' Day (HOK), most of whom are women because the huller machine operators are men. It shows that, indirectly, agricultural development by applying technology becomes a process of impoverishment for farmers. Still, impoverishment will be more specific for women because of power relations in the family and community (Peraza et al., 2012).

With the limited means of capital to support their work, women farmers' role increasingly does not exist and is marginalized by the emerging structure. Also, many government policies are more pro-market than in the community. Such as low government purchase prices for farmer rice, imported food, the use of chemical fertilizers to increase production but endanger women's health, and agricultural modernization are often unable to be adopted by female farmers because of their limited accessibility and capabilities (Habib & Fathallah, 2012).

In recent years women's involvement in the agricultural sector has been degraded due to massive mechanization in the farming sector. It is not new but has been around since the 1980s, namely the emergence of a tractor as a plow tool/paddy field and the use of ani-ani to sickle. Increasingly massive technological developments are now eroding women farm laborers' phenomenon in the harvest season around the last five years. Another cause is the government's program through the State Revenue and Expenditure Budget since 2012. This program seeks to facilitate the need for facilities and mechanization of postharvest agriculture by providing technical assistance for harvesting machinery (combine harvester). However, the stages of work that relatively involve many women workers are in the process of harvesting.

Several studies on the impact of agricultural modernization have been conducted. That rural modernization can improve the welfare of farm laborers (Parikh et al., 2005). The impact of agricultural modernization is to increase income. To analyze the effects of agrarian modernization on employment opportunities and the revenue of women farmworkers (Abdelali-Martini & Dey de Pryck, 2015). The study results found that agricultural modernization causes farmworkers to lose income, in contrast to previous studies' effects.

Some of the findings of studies on agricultural modernization in South Sulawesi have explained that economic modernization of agriculture has shown brilliant results, as evidenced by the food surplus that has been achieved in South Sulawesi in 2019. Still, agricultural modernization has caused much misery for small farmers, especially women farmers who lost jobs in the farming sector.

Dependence on technology brings changes to the farming community's fundamental knowledge related to ways to cultivate agricultural land passed down from generation to generation. The problem then arises when farmers do not have excellent skills; the implications for productivity levels are getting lower. Of course, with little benefit as well. So, it is not uncommon for many farmers to turn to other livelihood sources besides agriculture.

As a result, they leave the agricultural sector to work as construction workers, industrial workers, and even cross the region to become Indonesian workers (TKI) in Malaysia. This condition also changes the established social order in rural areas. Hayami and Ruttan (in Pudjiwati, 1985) have further consequences: farmers in rural areas are divided into two poles, namely commercial farmers, and small farmers.

Researchers have undertaken several academic studies to explore the influence of agricultural modernization. However, the study's findings have not been able to become the best solution for resolving the impact of rural modernization on women farmers in Sidrap Regency, South Sulawesi Province. So a more in-depth, solution-oriented, and comprehensive academic study of the effects of

agricultural modernization on female farm workers is still required.

1. LITERATURE REVIEW

1.1. Modernization

The core word "modern" derives its meaning from the Latin "Modernus" constructed from the terms modo and ernus (Inglehart & Welzel, 2007). The term modo means "the method," while ernus alludes to the current period. Modernization refers to the transition from the past to the present or the transition to modern civilization. Modernization can also refer to a shift from traditional to contemporary society (Robertson, 2005).

Modernism as a theory in classical sociology is owned by theorists, such as Marx, Weber, Durkheim, and Simmel, who see the emergence and influence of modernity on people's lives. Although the four figures saw the various advantages of modernism, they also highlighted the opposing sides faced in modern life. Marx, for example, saw that modernity is primarily determined by the capitalist economy in various aspects of people's lives, including socio-cultural life. Although Marx acknowledged the progress made by the transition of premodern society to a capitalist society (modern society), however, Marx's works were primarily aimed at criticizing the capitalist economic system, which, according to him, had many shortcomings, such as alienation and exploitation. Meanwhile, Weber saw that modern life determines the development of formal rationality at the expense of the type of irrational thinking. Humans are increasingly imprisoned in the iron cage of life, unable to reveal some of their most basic human traits.

Therefore, modernization is a change process in which people who are renewing themselves aim to acquire the qualities or features of modern society. Modernization is frequently related to mechanization, both about development science and technology (Robertson, 2005). In the late nineteenth and early twentieth centuries, it commonly used the term "modernization" to refer to the rise of rationality and secularism and the process by which humans were able to free themselves from the tyranny of government power and the chains of superstition.

Modernization in development has become a theme in many publications because it comprises complicated challenges that always motivate experts from numerous scientific areas to research it. Modernization in agriculture refers to the transition of production processes from traditional to more contemporary methods through technical improvements, particularly in the agricultural sector. Agricultural modernization is a renewal in the management and utilization of rice fields to maximize output results. In this situation, farmers are encouraged and guided to engage in novel farming practices (Fang & Zheng, 2013; López-Gunn et al., 2012). Capable of accepting and utilizing current technologies and changing the method of production used to boost household income.

1.2. Social transformation

Every culture will go through changes at some point in its history. It will show these changes if a comparison is made. It entails assessing the status of a society's particular moment and comparing its quality in the past. In principle, change in society is a constant process that every civilization will experience (Castles, 2010). However, changes between cultures are not necessarily the same, and some communities share it faster than others.

Cultural developments can call into question societal changes. There is an argument that social change differs from the cultural change in that social change encompasses structural changes in society, while cultural change involves changes in culture. The proposed distinctions are highly technical because, in some instances, it is simply impossible to define the type of change that happened. Although it may

distinguish the notion theoretically because no society does not have culture, and no culture is incarnated outside or not in society, it is frequently difficult to establish where the dividing line between individuals resides in actual life. As a result, defining the line between social and cultural development in real life is increasingly challenging. Usually, there is a reciprocal relationship as a cause and effect between the two symptoms.

Social developments are also linked to shifts in rural community culture from traditional to modern patterns. The concept of culture describes a village community's way of life that has not been influenced by contemporary technology or the economic system (Castles, 2001). In other words, the structure of traditional culture results from nature's immense influence on people whose lives are dependent on it. Changes in agricultural villages, particularly the intensification of the village's money economy system, will alter the existing structure of society (Gómez et al., 2011). The social stratification based on culture changed to economic competence, giving rise to a new elite in the village society, particularly the rich.

Changes in aspects of the social structure of a society can also affect changes in the super ideological structure, such as general ideology, religion, science, art, and literature. It seems that the theory of socio-cultural evolution is suitable as an analytical tool. This is because the entry of the modernization era into people's lives can result in the service exchange system shifting towards monetization. The emergence of such a shift can also result in moving various social systems in the region. For example, traditional social functions such as work patterns with a mutual assistance system that have been commonly performed by farming communities in South Sulawesi Province have now been shifted to a wage system. It also resulted in traditional values based on the character of agricultural production, which tend to be depleted and disappeared.

1.3. Roles, potentials, and opportunities of women

Economic and social developments have led to a disintegration of labor division between genders traditionally formed long ago. The new pattern of productive work between or across gender lines leads to discrimination in labor division between men and women (Tiwari et al., 2010).

In all strata, it is indicated that women's role and status in household survival are higher than men's (family heads). The dominant positions and levels show the high potential of women to control and direct their households, for the better or the worse. It is reinforced that more than 50 percent of the total population of Indonesia are women, of which more than 70 percent (or around 82.6 million people) are in rural areas, and 55 percent of them live from agriculture.

The data shows how big the potential of women farmers as workers need to be optimized utilization. Those women have a dual role in the household. The dual role of women has implications for (1) the role of work as a housewife (reflecting the feminine role), although not directly generating income, productively working to support men (heads of households) in search of profit (money); and (2) acting as a breadwinner (supplementary or primary). In the development of the image and prospects of women of the XXI century, several roles were formed, including:

The tradition places women in reproductive functions, where one hundred percent of their lives are to take care of the family and patrons of a clear division of labor (women at home / domestic, men outside home/public). The role of transition, prioritizing tradition more than others, the division of work according to gender aspirations, harmony, and domestic affairs, remains women's responsibility (Arnon, 1981; Emerick et al., 2016; Yang & Zhu, 2013).

Positioning women in two worlds of life (domestic-public roles are equally important), moral support, and husband's attention become triggering rigidity or anxiety. The part of egalitarianism, activities in the public surrounding women's time and attention, moral support, and concern for men are essential to avoiding conflict. The role of contemporary is the impact of a woman's choice to be alone in solitude.

The number of these groups is not much, but various clashes of male domination (which is not necessarily concerned with women's interests) will increase its population (Blanco-Muñoz & Lacasaña, 2011).

1.4. Modernization of Agriculture and Social Change in Peasant Communities

The village community as an institution is constantly developing following the supportive community and creating the culture of the surrounding environment. If viewed from the theory of evolution pioneered, the changes that occur are seen as progress in line with the evolutionary process. The evolutionism paradigm, which means a perspective emphasizing changes gradually for the better or more advanced from simple to advanced. The adaptationist perspective explains that these changes are steps for the village community to adjust to the objective situation of the external environment, which includes the physical, socio-cultural, political economy, and technology environment. Population growth is in line with geometric progression, and the rate of availability of food sources is in arithmetical order. The reality of modernization encourages the creation of an involution of food sources as a negative result of the population explosion of rural communities as happened in the province of South Sulawesi.

Modernization of agriculture is a change in farm management from traditional to more advanced agriculture using new technology (Evans et al., 2002; Johnston, 1970; Min & Zhiqiang, 2005). Modernization can be interpreted as transformation, namely, change. In a broader sense, the conversion includes changes in the external forum and consists of the basic form, function, structure, or characteristics of a community's economic business activities (Preibisch, 2004). Modernization can be interpreted as the form, features, construction, and capability of the agribusiness activity system in arousing, growing, developing, and making the economy of the people involved (Chernova & Kheyfets, 2018; Fang, 2001; Hai-zhang, 2005). Agricultural transformation is identical to the modernization and development of farming communities in rural areas from the socio-cultural aspect.

All people are always involved in the process of change. Although the direction of change is different from one community to another, this change process is broad (Duru & Therond, 2015; Jin-you, 2009; Skvortsov et al., 2018; Van der Ploeg, 2000). It can hardly be limited by its scope and problems, starting from social, cultural, political, and economic issues. Historically the process of economic change moves from traditional economic conditions or towards a modern financial system. This change process drives various community efforts to improve its economic level to be more independent (Peraza et al., 2012).

Poverty is the deprivation of capability (capability deprivation). Indeed, it has happened to women in agricultural development, especially in agricultural technology in rural areas (Altieri, 1998; Yan-feng, 2003). A sickle replaces the ani-ani, the loss of mortar due to being replaced by a harvester, and many more changes occur in women (McCurdy et al., 2003). Specifically, it revealed that poverty might be a direct cause but, at the same time, is a symptom of a more in-depth fundamental process that often arises in social injustice, unequal access, and control of resources and inappropriate development models (Silvey & Elmhirst, 2003).

The elimination of local knowledge by Western knowledge is seen as not systematic, primitive, and unscientific. They are called the West's system (western system), which establishes agricultural technology named the green revolution. This green revolution has consequences for reducing the diversification of plant, animal, human, and cultural life (Xiao et al., 2013).

The current study aims to highlight the overall mechanism of how technical and economic changes in the management of lowland rice farming have shifted female farmers out of the agricultural sector. This study seeks to examine the process of changing social structures that have resulted in the displacement of women farmers. Given that not many empirical studies have been conducted on the negative impact of agricultural modernization on women workers (Ko & Choi, 2019), this study attempts to explain the

impact of agricultural modernization in Indonesia in general.

2. Generalization of the Main Statements

2.1. Impact of Agricultural Modernization

Modernization in agriculture has two positive and negative sides. Modernization is very helpful for farmers, but modernization can also be very detrimental to farm laborers. Giddens said that modernization is like a double-edged sword with positive and negative sides. In the process of agricultural production, the implementation of activities goes through several stages. Each stage is a work unit that can distinguish from other steps; however, all the steps are a unified process that we can see in full. In the agricultural methods that harm women, farmworkers include land management, nursery, planting, fertilizing, harvesting, and post-harvesting. It can explain as follows:

2.1.1. Tillage

It can see the process of processing land in an agricultural process in production activities' initial process. In the process of cultivating, this land usually consists of a processing area for spreading rice seeds. Growing soil for planting rice seedlings, in the first process for applying rice seeds, farmers typically do it using a hoe. Because spreading rice seeds does not require land, an area usually only uses 7x3 M2 of land to do it with a hoe. However, tillage for planting rice seedlings often uses a tractor engine. This tractor is used for the process of cultivating the land or large tracts of land. The processing costs are also calculated per stake, which is 3000 M2 at the expense of 150,000 IDR. For earthworks with this tractor, it is usually done by two people, one person is the operator of a tractor engine, and the other is working on finishing the rice field dike using a hoe.

At this time, the farmers no longer want to be bothered with the slow process of working on agricultural land because the faster they finish it, they can immediately get results. For this reason, farmers tend to choose a tractor as a means of processing their land. Land management farmers prefer to use a tractor and hoe as a tool to cultivate their farmland. With the tractor, the farmers begin to leave the plow tool they used to use, namely buffalo plow, because by using a tractor, they can save costs and time to work on it very useful while the hoe is a tool that cannot separate from this process. After all, this tool helps tidy paddy fields. Still, this fireplace process usually has been done or bought up by the tractor owner because processing land with a tractor is typically a piece of work calculated per area of farmers' land.

The positive and negative impacts of using a tractor that is helping farmers. Especially in the pursuit of the growing season with limited water availability. Besides, it can save labor time and human resources because it only takes two to two and a half hours to cultivate the land. Besides that, one tractor unit is only held by two people. The negative impact is reducing male hoe workers who usually require a lot of energy to cultivate agricultural land and the loss of livelihood of the owners of buffalo plows replaced by tractors.

2.1.2. Seed selection and planting

For planting, it is done after the process of land management is complete (Ahdan et al., 2019). Still, before planting and processing the land takes place, it usually takes place to plant rice seeds; seeding rice seedlings usually starts from soaking rice seeds in water. Typically, the process of soaking the rice seeds lasts about two days until you see sprouts in the rice seeds. After the rice seeds were germinating, then it sowed them in the prepared land (Gani et al., 2019; Sawitri et al., 2019). Usually, selecting suitable ground for sowing rice seeds chooses in an area that is not too high and not too low because if the soil is too top, usually the sources will lack water. Still, if the ground is too small, the seeds will often be submerged in water and rot. It usually takes about 20-25 days; only after land management is

finished, the farmers move the seeds to their agricultural land and plant them. For selecting sources, farmers prefer to buy seeds from farm shops to get abundant yields besides choosing superior rice seeds, which are usually also resistant to pests or weeds.

Farmers prefer to use seeds that they buy from farm shops or farmer groups rather than using sources in their villages. Because by using superior rice seeds, farmers can get abundant yields compared to using local rice seeds. Besides, excellent rice seeds can be more resistant to pests when compared to local bases. So, the impact of this is that now the local roots are no longer used by farmers.

2.1.3. Fertilization

Fertilization is essential in the agricultural process because it can overcome plant fertility and control pests or diseases by fertilizing it; it is usually done two times at one planting at this fertilizing phase. The first fertilization is generally done on plants that are still seven days old (Tamsah et al., 2020). The fertilizer used by farmers is usually UREA, SP / essential fertilizer, and, if necessary, added with SATUR-D / grass repellent drugs. The second fertilization is generally done when the rice is around 20 days old; in this double fertilization, the fertilizer used differs from the fertilizer used in the first fertilization; the second fertilization usually uses ZA, PHONSKA fertilizer. It is often also added with FORADAN, which is helpful to overcome pests used to attack plants. For fertilizing methods, usually, all fertilizers and medicines are mixed into one, then the fertilizer is spread evenly throughout the land.

In the case of fertilization, it is also apparent that there is a change in technology used by farmers in Tonrongnge Village, which initially farmers in Tonrongnge Village only use manure or compost for fertilization. Still, now farmers are more likely to choose chemical fertilizers for fertilization. Farmers prefer it because chemical fertilizers can fertilize their crops more than compost.

2.1.4. Harvest and Post-Harvest

They are usually done at harvest time when the rice is old enough and has reached enough age for harvest. Rice fruits that are old enough to be harvested or harvested often have clear signs. Rice grains that have started to turn golden yellow and usually also has begun to age brownish yellow. If the age of rice is already around that, then the rice is ready to harvest. Farm laborers usually do this harvesting period. It is in this phase that the involvement of women farmworkers is evident in the agricultural sector. Now the role of women farmworkers is no longer needed by landowner farmers because farm laborers require a lot of costs, mainly when the land will harvest quite broadly. Therefore, with massive agriculture mechanization, farmers are more likely to choose a rice thresher machine called a flasher in Sidrap, known as the combine harvester. Farmers prefer to use this tool because it can shorten their harvest time and useless labor.

The post-harvest phase of yield management is the overall treatment or action for the harvest, i.e., rice or grain, and the wise arrangement and use to provide the best results for farmers. Yield processing is done after the rice has been removed from the stems or after it has been milled. This phase usually involves the process of drying, storing, and processing it into the rice. It can see the modernization of agriculture at the time of post-harvest in preparing rice into the rice.

Farmers in Tonrongnge Village used to use mortar to peel rice seeds from their skin by pounding rice in a battery, but at this time, the farmers no longer want to be bothered with this. Farmers are more likely to choose to grind their rice in a rice mill. More recently, there is a mobile rice mill business. Farmers prefer this tool because farmers in the village of Tonrong can grind their rice without bringing it to a rice mill. After all, the owner of the grinding machine is coming to them.

2.2. Women's employment opportunities for agricultural modernization

As a result of the modernization of agriculture, it is women who feel disadvantaged. It is because agricultural processes used to use female labor still have been gradually replaced by farming technologies that have begun to urge women's existence in agriculture. Of course, it is very detrimental to women because it will significantly decrease in terms of income. The women farmworkers feel very disadvantaged because of the existence of modern agricultural tools today. Of course, it is very detrimental to women because it will significantly decrease in terms of income. The women farmworkers feel very disadvantaged because of the existence of modern agricultural tools today. It happened because almost all jobs in the farming process that needed female workers began to be replaced by these tools. The employment opportunities of women farmworkers will gradually run out. It is as explained as follows:

2.2.1. Harvesting

For this harvesting process, women used to work to harvest rice with specific tools. Then women were also tasked with providing rice to be threshed with specific tools operated by men. But now, the paddy owners prefer to use the services of a flasher machine with a wholesale system. The owner of this flasher used to set a cost of 300,000 rupiahs area of 3000 m2, and the owner of the land directly transported produce to their homes. Landowners now prefer to use flashers rather than using farm laborers, so farm laborers are now increasingly disadvantaged by the existence of these tools.

The women feel very disadvantaged due to the flasher machine, which is now beginning to shift their employment opportunities in this harvest process. Because of the commercial system of flasher machine owners for harvesting, female workers for the harvest process are no longer used. So those women now lose their employment opportunities in the harvesting process.

2.2.2. Processing of Results

In the process of processing these results, women used to use a mortar tool to peel rice. It is not used because the farmers choose the rice grinder, especially now that this milling machine is made as practical as a vehicle, so farmers no longer bring their rice to the mill because soon the mill is coming to them. Thus, women farm laborers are now disadvantaged by this tool's existence because the agency has shifted their employment opportunities in processing this product.

We can see the loss of women in yield processing; in the past, women used to use mortar to grind rice; now, farmers choose to use machines to grind their rice; utilizing this machine, rice yields can help processing time be fast.

2.3. Women's income in the era of agricultural modernization

The impact of agricultural modernization affects women's employment opportunities in agriculture so that the effect on women's income will decrease. Usually, women farmworkers get wages in cultivating paddy fields paid per day, i.e., leaving in the morning and returning home in the afternoon. As a result of the modernization of agriculture, land cultivation has an impact, including the harvesting process. Can explain as follows:

2.3.1. Harvesting

For this harvesting problem, women are also very disadvantaged because, before a machine (combine harvester), female labor in the Tonrongnge Village is still needed to help the harvesting process. But because of this machine, now the women in Tonrongnge Village are no longer in use. The inclusion of a harvester combine tool in Sidrap Regency, especially in Tonrongnge Village, has caused inequality and uneven distribution of wealth due to changes in income, which were initially owned by farm laborers

and turned to the owners of these tools and their workers.

Thus, since the modernization in agriculture, it has turned out to impact women, especially in terms of employment opportunities and women farmworkers' income. In part, women in the village of Tonrongnge have entered since the mechanization in the agricultural sector. Many women have lost their jobs as farm laborers, especially in the harvest season. Difficulties in finding other jobs outside the farming sector have prevented women from harvesting workers from working outside the agricultural sector. They then only become housewives. The condition causes them to be vulnerable to be categorized as inferior (maparri) or mediocre (genneq-genneq) as experienced by socioeconomically vulnerable women in fishing communities on Salemo Island, Pangkajene Kepulauan Regency, Sulawesi South (Hasbi et al., 2019).

3. Discussion

Experts have conducted several studies on socioeconomic changes in modernization, giving rise to theories and concepts that are now used in various disciplines. Furthermore, the objective survey is used as an illustration to reinforce the notion of modernization and assess the outcomes that have been carried out by numerous researchers, though the scope is diverse. Several studies on social transformation because of agricultural modernization have been conducted.

Research on changes in the social/economic behavior of farmworkers with the application of industrialization. The results showed that the farming community experienced changes in behavior and economic patterns. This is evidenced by the development of mindsets and consumption patterns. At the same time, changes in the economic structure of society are shown by an increase in the number of workers turning to the industrial sector (Acemoglu et al., 2009).

The similarity between this research and the research conducted in Sidrap Regency is that they look at how farmers experience changes in social and economic behavior patterns. The difference lies in the study of Acemoglu et al. (2009) described farm laborers as starting to switch professions to the industrial sector, while for farmworkers in Sidrap Regency, farm laborers remained in the agricultural industry with the traditional model by strengthening social ties.

Research on "modernization, cultural change, and the persistence of traditional values," the results of his study, states that modernization in a country brings significant changes to the people of that country. The changes that occur are social, economic, and cultural structures (Inglehart & Baker, 2000). What is of concern is the change in the social system that has changed a lot. For example, farming that used to take days to process is shorter, only done a few days.

The similarity with modernization research in Sidrap Regency is seeing society experiencing social changes resulting from modernization that has entered the culture. In addition, agricultural modernization carried out in a country also sees the implementation of the green revolution policy applied as the start of modernization in a country. Meanwhile, the difference between this research and the research conducted in Sidrap Regency is that it focuses more on changes in the social behavior of farmers in rural areas, not for the wider community.

Research on the change from traditional technology to modern technology for agriculture in Brazil illustrates that the increase and decrease in crop yields are determined by the people's culture but must be balanced with the use of superior seeds, pesticides, fertilizers, and irrigation (Taddei, 2011). This shows that rural farming communities have experienced an increase in the value of rationality and power. Besides that, the community is starting to lose its social ties. Such as cooperation, which has faded because a wage system has replaced it. Still, on the other hand, the community has experienced an increase in income.

The similarity between research in Brazil and research in Sidrap Regency is that they both see technological changes in agriculture, which have initially been traditional with manual systems, have now been replaced with modern technology that is more practical and automatic. However, the difference lies in the results obtained from the research, if the study in Brazil describes social ties starting to fade. In contrast, the research conducted in Sidrap District shows an indication that social relations are getting stronger.

Research on "The development of Brazilian agriculture: future technological challenges and opportunities" the results show that the impact of agricultural modernization is more influential on sustainable livelihoods than non-tribal groups (Pereira et al., 2012). This indicates that non-tribal groups have changed their lives due to several factors, namely natural, social, human, and financial. Meanwhile, for the tribal group respondents, agricultural modernization did not have much impact. The similarity between this research and the research in Sidrap Regency is looking at modernization in the agricultural sector in non-tribal communities and seeing the impacts that occur due to agricultural modernization.

Research on the socio-cultural changes of local farmers in Europe, the results of his study explain that socio-cultural changes before and after the entry of plantations provide changes in people's livelihoods and increase the family economy (Morris & Winter, 1999). However, it also affects people's social behavior. This is influenced by the fact that some people in Europe have a livelihood as shifting farmers so that people's income is considered insufficient to meet their daily needs. The existence of socio-cultural changes in the community has negative and positive impacts, namely forming employment opportunities. Still, the nature of cooperation and social ties in society has decreased.

The similarity between the research and the research conducted in Sidrap Regency lies in the change in people's social behavior due to something new entering their lives, namely the plantation system. In contrast, the research in Sidrap Regency is the inclusion of modern agricultural materials and modern agricultural tools. The difference in this study is to look at the socio-cultural behavior of the community after entry of plantations. At the same time, the research that it will carry out in Sidrap Regency is farmers' social and economic behavior in rural areas.

The agricultural community in driving agricultural activities is dynamic. One that affects the dynamics of agrarian society is modernization. The modernization of agriculture in Indonesia is the modernization of production, marked by a fundamental change in the pattern of agriculture from the traditional way to a more advanced course. These changes include several things, including soil management, use of superior seeds, use of fertilizers, use of agricultural production facilities, and timing of harvesting.

CONCLUSION

The employment opportunities and income of women farm laborers in Tonrongnge Village in agricultural modernization are declining. It can be seen from women's participation in the agricultural sector, starting from planting to harvesting, which no longer involves female workers. The entry of technology into rural areas in Sidrap Regency with technology at harvest is very beneficial for landowners because it saves costs and is also valuable for using time. But with this technology, impacts women's employment opportunities as farm laborers who use the harvest season as a source of income. The decline in women's employment opportunities in the agricultural sector also has an impact on their profits. Women have been unemployed as farm laborers after mechanization in the farming sector. The unemployed choice is a forced choice for women farmworkers because they do not have the skills knowledge, nor do they have the capital to open a business. This causes them not to be able to get out of poverty.

With the dynamics of agricultural modernization through new technologies, agriculture is a worthwhile business venture. Farming patterns from subsystem to commercial and the dynamics of social processes have revealed a shift in values from collective farmer conduct to individual behavior. Because of the use of modern agricultural inputs and the usage of combined machines for threshing rice, technological development has sidelined female farmworkers, diminishing the female workforce. The method of transforming the economic system from a production-oriented to a commercial-oriented one results from the subsystem's production orientation. Farmers in Sidrap Regency store their grain in factories for sale. Due to the fading homogeneity of farmers, the sharpening, and social polarization, changing the social structure marginalizes female farmworkers.

References

Abdelali-Martini, M., & Dey de Pryck, J. (2015). Does the Feminisation of Agricultural Labour Empower Women? Insights from Female Labour Contractors and Workers in Northwest Syria. Journal of International Development, 27(7), 898–916. https://doi.org/10.1002/jid.3007

Acemoglu, D., Johnson, S., Robinson, J. A., & Yared, P. (2009). Reevaluating the modernization hypothesis. Journal of Monetary Economics, 56(8), 1043–1058.

Ahdan, S., Kaharuddin, Burhani, A. H., Yusriadi, Y., & Farida, U. (2019). Innovation and empowerment of fishermen communities in maros regency. International Journal of Scientific and Technology Research, 8(12).

Altieri, M. A. (1998). Ecological impacts of industrial agriculture and the possibilities for truly sustainable farming. Monthly Review, 50(3), 60.

Arnon, I. (1981). Modernization of agriculture in developing countries: resources, potentials and problems. Modernization of Agriculture in Developing Countries: Resources, Potentials and Problems.

Blanco-Muñoz, J., & Lacasaña, M. (2011). Practices in pesticide handling and the use of personal protective equipment in Mexican agricultural workers. Journal of Agromedicine, 16(2), 117–126. https://doi.org/10.1080/1059924X.2011.555282

Castles, S. (2001). Studying social transformation. International Political Science Review, 22(1), 13–32.

Castles, S. (2010). Understanding global migration: A social transformation perspective. Journal of Ethnic and Migration Studies, 36(10), 1565–1586.

Chernova, V. Y., & Kheyfets, B. A. (2018). Tools for estimating the effectiveness of import-substituting modernization: sase in the agriculture of Russia.

Duru, M., & Therond, O. (2015). Livestock system sustainability and resilience in intensive production zones: which form of ecological modernization? Regional Environmental Change, 15(8), 1651–1665.

Emerick, K., De Janvry, A., Sadoulet, E., & Dar, M. H. (2016). Technological innovations, downside risk, and the modernization of agriculture. American Economic Review, 106(6), 1537–1561.

Evans, N., Morris, C., & Winter, M. (2002). Conceptualizing agriculture: a critique of post-productivism as the new orthodoxy. Progress in Human Geography, 26(3), 313–332.

Fang, H. (2001). Employment of the Country Women during Agriculture Modernization. Research of Agricultural Modernization, 4.

Fang, X. Q., & Zheng, H. (2013). The supports to new urbanization: Agriculture modernization and industrial innovation [J]. Journal of South China Normal University (Social Science Edition), 30–37.

Gani, M., Arsyad, M., Syariati, S., Hadi, A., & Yusriadi, Y. (2019). Success in management of student businesses with personal characteristics, government assistance and entrepreneurship curriculum. International Journal of Recent Technology and Engineering, 8(3).

Gómez, A., Puigvert, L., & Flecha, R. (2011). Critical communicative methodology: Informing real social transformation through research. Qualitative Inquiry, 17(3), 235–245.

Habib, R. R., & Fathallah, F. A. (2012). Migrant women farm workers in the occupational health literature. Work, 41(SUPPL.1), 4356–4362. https://doi.org/10.3233/WOR-2012-0101-4356

Hai-zhang, H. E. F. L. E. I. (2005). Ecological Agriculture: a Necessary Choice for Agricultural Modernization in China [J]. China Population, Resources and Environment, 2.

Hasbi, Sukimi, M. F., Latief, M. I., & Yusriadi, Y. (2019). Compromise in traditional ceremonies: A case study of the Rambu solo' ceremony in Toraja regency. Humanities and Social Sciences Reviews, 7(6). https://doi.org/https://doi.org/10.18510/hssr.2019.7651

Inglehart, R., & Baker, W. E. (2000). Modernization, cultural change, and the persistence of traditional values. American Sociological Review, 19–51.

Jin-you, S. U. N. (2009). Large-scale Management and Strategy Analysis during Modernization of Agriculture in Xuzhou City. Jiangsu Journal of Agricultural Sciences, 6.

Johnston, B. F. (1970). Agriculture and structural transformation in developing countries: A survey of research. Journal of Economic Literature, 8(2), 369–404.

López-Gunn, E., Mayor, B., & Dumont, A. (2012). Implications of the modernization of irrigation systems. Water, Agriculture and the Environment in Spain: Can We Square the Circle, 241–253.

McCurdy, S. A., Samuels, S. J., Carroll, D. J., Beaumont, J. J., & Morrin, L. A. (2003). Agricultural injury in California migrant Hispanic farm workers. American Journal of Industrial Medicine, 44(3), 225–235. https://doi.org/10.1002/ajim.10272

Min, Y. M. B. R. L., & Zhiqiang, T. (2005). Development of Agricultural Mechanization and Construction of Modern Agriculture [J]. Transactions of The Chinese Society of Agricultural Machinery, 7.

Morris, C., & Winter, M. (1999). Integrated farming systems: the third way for European agriculture? Land Use Policy, 16(4), 193–205.

Parikh, J. R., Gokani, V. N., P.B.Doctor, Kulkarni, P. K., Shah, A. R., & Saiyed, H. N. (2005). Acute and chronic health effects due to green tobacco exposure in agricultural workers. American Journal of Industrial Medicine, 47(6), 494–499. https://doi.org/10.1002/ajim.20162

Peraza, S., Wesseling, C., Aragon, A., Leiva, R., García-Trabanino, R. A., Torres, C., Jakobsson, K., Elinder, C. G., & Hogstedt, C. (2012). Decreased kidney function among agricultural workers in El Salvador. American Journal of Kidney Diseases, 59(4), 531–540. https://doi.org/10.1053/j.ajkd.2011.11.039

Pereira, P. A. A., Martha, G. B., Santana, C. A. M., & Alves, E. (2012). The development of Brazilian agriculture: future technological challenges and opportunities. Agriculture & Food Security,

1(1), 1–12.

Preibisch, K. L. (2004). Migrant agricultural workers and processes of social inclusion in rural Canada: Encuentros and desencuentros. Canadian Journal of Latin American and Caribbean Studies, 29(57–58), 203–239. https://doi.org/10.1080/08263663.2004.10816857

Robertson, R. (2005). Modernization. Routledge.

Sawitri, N. N., Ermayanti, D., Farida, U., Junus, D., Baharuddin, Hasmin, Yusriadi, Rachman, E., Jumra, & Vikaliana, R. (2019). Human Resources Competency, the Use of Information Technology and Internal Accounting Control on Time Procurement of Financial Reporting. 1st International Conference on Advance and Scientific Innovation (ICASI). https://doi.org/https://doi.org/10.1088/1742-6596/1175/1/012263

Silvey, R., & Elmhirst, R. (2003). Engendering social capital: Women workers and rural-urban networks in Indonesia's crisis. World Development, 31(5), 865–879. https://doi.org/10.1016/S0305-750X(03)00013-5

Skvortsov, E. A., Skvortsova, E. G., Sandu, I. S., & Iovlev, G. A. (2018). Transition of agriculture to digital, intellectual and robotics technologies. Ekonomika Regiona, 3, 1014.

Taddei, R. (2011). Watered-down democratization: modernization versus social participation in water management in Northeast Brazil. Agriculture and Human Values, 28(1), 109–121.

Tamsah, H., Ansar, Gunawan, Yusriadi, Y., & Farida, U. (2020). Training, Knowledge Sharing, and Quality of Work-Life on Civil Servants Performance in Indonesia. Journal of Ethnic and Cultural Studies, 7(3). https://doi.org/https://doi.org/10.29333/ejecs/514

Tiwari, P. S., Gite, L. P., Majumder, J., Pharade, S. C., & Singh, V. V. (2010). Push/pull strength of agricultural workers in central India. International Journal of Industrial Ergonomics, 40(1), 1–7. https://doi.org/10.1016/j.ergon.2009.10.001

Van der Ploeg, J. D. (2000). Revitalizing agriculture: farming economically as starting ground for rural development. Sociologia Ruralis, 40(4), 497–511.

Xiao, H., McCurdy, S. A., Stoecklin-Marois, M. T., Li, C.-S., & Schenker, M. B. (2013). Agricultural work and chronic musculoskeletal pain among latino farm workers: The MICASA study. American Journal of Industrial Medicine, 56(2), 216–225. https://doi.org/10.1002/ajim.22118

Yan-feng, L. I. U. (2003). Developing Green and Organic Agriculture Quickly Is the Key to Realize Modernization of Agriculture [J]. Theory Observe, 4.

Yang, D. T., & Zhu, X. (2013). Modernization of agriculture and long-term growth. Journal of Monetary Economics, 60(3), 367–382.