Socio-economy dynamics of hybrid corn farmers in South Sulawesi

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Abstract. The development of agriculture through technological processes in the field of agriculture is a dynamic of society that results in certain changes in its socio-economic life. The changes that occur in the farming community of hybrid corn seed production include changes in social aspects and economic aspects. In an effort to increase the production and productivity of hybrid corn, quality seeds are needed. To obtain quality seeds, internal and external monitoring is required in accordance with the management of seed quality standards. In seed production, there are two obstacles that are often faced, including social constraints in setting planting distance and time isolation, roguing, and detasseling. Economic constraints are caused by limited capital owned by farmers and the marketing system that is tied to the rights of seed licensors. To anticipate the obstacles that arise in the farming community, the role of the government is needed to take various steps and policies that can support farmers in dealing with their problems. In this case, government support is highly expected in determining the mapping of the seed area so that it can guarantee the purity of the crop in seed production.

1. Introduction
The role of seeds is very important in determining the success of plant production. Seeds with good quality and uniformity will produce high quality products. The strategy for providing corn seeds is to conduct cultivation training in order to meet the needs of farmers around the corn development area and to disseminate seed products to accelerate the spread of new high yielding varieties from Research and Development Agency [22]. In an effort to build food self-sufficiency, the government has targeted corn self-sufficiency. However, one of the challenges in increasing the productivity of corn commodities today is the limited supply of seeds and other obstacles [26]. For this reason, serious efforts are needed in dealing with seeds other than these challenges. The challenge in the future is how to meet the needs of corn as a raw material for feed, food, and energy [2]. To meet the increasing demand, the availability of corn must be sufficient to achieve self-sufficiency with the support of various policies and programs launched by the government. The volume of corn supply is determined by the needs that must be met nationally [16].

Hybrid corn commodity has very bright prospects to increase farmers' income. This is due to the position of corn as a food ingredient for a group of people as a rice substitute commodity and as a supporter of the development of the animal feed industry that utilizes corn as the main raw material, so that it has a higher market opportunity. In a study conducted by [20] stated that the development of superior corn varieties will ensure the success of the corn production program. Corn plant which in
scientific language is *Zea mays* is a type of grain plant and grass family (Graminaceae) and is now popular throughout the world. "According to history the corn plant came from America." This is in line with what was stated by [18] about the history of hybrid corn plants. The genetic source (Plasma Nuftah) of corn plants comes from America. It is said that a form of corn plant called Pod Maize has grown 4500 years ago in the Andes mountains, South America. Other literature mentions that corn thrives in the Mexican region and then spread to Central America and South America.

In addition, corn has a multipurpose function (4F), namely for food (food), feed (feed), fuel (fuel), and industrial raw materials (fiber). In animal feed rations, especially poultry, corn is the main component with a proportion of about 60%. It is estimated that more than 58% of domestic corn needs are used for feed, while only about 30% for food, and the rest for other industrial needs and seeds [11]. Therefore, the demand for corn as a raw material is increasing. The use of corn for feed is driven by its relatively affordable price, contains high calories and protein with complete amino acid content, and is preferred by livestock compared to other raw feed materials. Efforts to replace corn with other grains do not seem to have succeeded in replacing corn raw materials so corn is still the main raw material for feed [7].

Along with the increasing demand for corn needs, the development of domestically sourced corn production must be pursued to be met. By referring to the potential of land resources and the performance of corn farming, this commodity still has a large opportunity to be developed with some justifications: (1) The average productivity in Indonesia is still below its potential. In the last 5 years, the corn productivity in Indonesia increased by an average of 4.78 percent, from 34.54 quintal/ha (dry shells) in 2005 to 42.10 quintal/ha in 2009. This achievement is still below the potential productivity of existing corn varieties. The productivity of composite corn can reach 5-6 tons per hectare, while hybrid corn can reach 8-10 tons per hectare. (2) In general, pests and diseases of corn are relatively small, so the risk of crop failure due to pests and diseases is relatively small, thus attracting the interest of farmers and investors to cultivate them. (3) The availability of technology and the relatively simple cultivation of corn commodities, so that it is easily adopted by farmers. Corn cultivation does not require intensive observation, does not require a lot of water and can be intercropped, with small farming costs. With these conditions, it is easy for new farmers to adopt technology properly [2].

One of the government's efforts to increase corn production is to make high-yielding corn seeds available and easily accessible to farmers, as stated by [3]. After seed production is available, the acceleration of seed distribution is carried out until it reaches the user, while the technique for accelerating seed distribution can be done by developing new high yielding varieties seeds through a dissemination program. This is in line with the policy of the ministry of agriculture to issue various regulations to support these seeds, including Law no. 12 of 1992, concerning Plant Cultivation Systems. Government Regulation No. 44/95, on Plant Germination. Minister of Agriculture Regulation No. 39/Permentan/OT.140/8/2006, concerning Production, Certification and Distribution of Seeds. Minister of Agriculture Regulation No. 38/Permentan/OT.140/8/2006 concerning Import and Export of Seeds. Minister of Agriculture Regulation No. 37/Permentan/OT.140/8/2006 concerning Testing, Assessment and Release of Varieties. Minister of Agriculture Regulation No. 28/Permentan/SP.120/3/2007 Decree of the Minister of Agriculture in 1999 concerning the Establishment of a Certification Agency for the Quality System of Seeds for Food Crops and Horticulture [10].

Breeding is done to bring out the superior traits. The role of seeds in modern agriculture that seeds is as a distributor of technological advantages to farmers and other consumers. To produce high-quality agricultural products, it is necessary to start with planting quality seeds, namely seeds that have superior characteristics of the certain variety. In the procurement and distribution system, the quality of a seed can be determined by several factors, including: (1) the production system, (2) the processing of the product, (3) the storage of the product, and (4) the handling during the distribution of the seed. Efforts to increase corn production from the technical aspect, the technology used to increase corn productivity is the use of quality and certified superior seeds with the development of superior varieties that have high yields and are adaptive to certain conditions [19].
The purpose of this paper is to see the level of development of hybrid corn breeding in South Sulawesi both from the social aspect and from the economic aspect that occurred during the activities of the Source Seed Cultivation Unit which was carried out at BPTP South Sulawesi since 2017-2020.

2. Hybrid Corn Seed Technology

One of the efforts to increase corn productivity is to use high quality seeds. On the other hand, the provision of quality seeds for farmers at affordable prices is still experiencing obstacles. Seed producers whose production centers are scattered in various regions and the wide distribution of farmers’ planting areas are obstacles in controlling seed production and distribution. Seeds with high yields and good quality are needed in a production system. High yields and guaranteed quality are generally found in superior varieties of hybrid corn. Therefore, it is necessary to increase the use of hybrid corn seeds which have higher yield potential than composite and local seeds [17].

Source Seed occupies a strategic position in the national seed industry, because it is a source for the production of derivative seeds that will be used by farmers. The Agricultural Research and Development Agency has released many superior varieties but some are less developed. Some of the problems that are still being faced today are: 1) not all of the high yielding varieties released can be adopted by farmers or seed users, 2) the availability of source seeds and seeds that are spread ”six criteria” (variety, quality, quantity, time, location and prices) have not been met, 3) the performance of production institutions and seed quality control has not yet been optimal, and 4) not all farmers use quality/certified superior seeds. The reality on the farmers shows that one of the causes of the low production is because the quality of the seeds planted is not good, and comes from crops that have been planted many times. Therefore, the availability and quality control efforts of source seeds need to be improved. Source seeds must be able to reflect and at the same time ensure the availability of quality seeds, namely genetically pure, physiologically vigorous, physically clean, uniform, and healthy [29].

The Agricultural Research and Development Agency has produced 38 open pollinated varieties and 14 hybrid varieties until 2004. The share of high yielding corn varieties planted by farmers in Indonesia in 2002 only reached 75%, consisting of 48% open pollinated varieties and 27% hybrid varieties [13]. The technological components used can provide an appropriate synergistic effect, but must be supported by an adequate institutional system. The production technology in question includes high-yielding varieties, quality seeds, optimal plant populations, efficient management of nutrients and water, control of plant pest organisms, and post-harvest technology in accordance with land conditions and farmers' socioeconomic conditions. Among the components of corn production technology, high-yielding varieties (both hybrid and open-pollinated) have an important role in increasing corn productivity. In addition to the potential for productivity and resistance to pests and diseases, other plant characters that need to be considered in the selection of superior corn varieties are their suitability to environmental conditions (soil and climate), including drought tolerance and acid soil, as well as farmer preferences for other characters such as age of harvest and seeds color [4].

To support the development of formally licensed seedling, it is necessary to support the availability of quality seed sources (certified) in the right quantity, type of variety and time of supply, location and affordable price. Seed quality is largely determined by location factors, including 1) easy to monitor and maintain, 2) fertile land with good irrigation and drainage, 3) pest and disease disturbances can be controlled; 4) fallow land or clear history of previous seasons, 5) sufficient sunlight, and 6) adequate insulation. The ways to increase yields include 1) agronomy, namely the creation of a conducive growing environment for plants, in order to obtain optimal results. The agronomic methods include the dosage and method of application of fertilizers, irrigation, regulation of plant population per unit area, and crop yield management; 2) increasing the ability of plants through plant breeding, which is an attempt to change the character of plants, so that new varieties are obtained that are superior to the existing ones.

The components of corn seed production technology include:

1. Superior varieties

Selection of new superior varieties according to farmers' preferences.
2. **Determination of the location**
   The plants require the right distance and time isolation. The isolation distance is 300 meters from ordinary corn planting, while the isolation time is required for 3 weeks from the time of planting other varieties of corn in the hybrid seed production area.

3. **Land preparation**
   Tillage is carried out if the soil is heavy textured and without tillage if the soil is light textured.

4. **Quality seeds**
   The high-quality seeds (germination >95%), given seed treatment with metalaxyl 2 grams (product material) for each kg of seed. Estimated requirement of seeds is 15-20 kilograms per hectare.

5. **Population**
   Planting with the right population of about 66,600 plants per hectare, spacing of 75 cm x 40 cm with two plants per hole or 75 cm x 20 cm with one plant per hole.

6. **Fertilization**
   Nitrogen (N) fertilization based on plant growth stadia and leaf observations using leaf color chart (BWD).

7. **Roguing, removing/uprooting undesirable plants**
   To maintain genetic quality, roguing is carried out on plants from flowers that deviate from what they should be by cutting female and male flowers as well as cutting and removing off-type plants or plants that are not healthy/perfect [28]. The presence of other plants in planting for seed is not permitted because the seeds contaminate the seed product to be harvested due to size or shape that is difficult to separate or identify. Such plants, commonly called rogues, cannot be accepted in seed planting even in small quantities. Rogues can be weeds, plants of another species, plants of other cultivars within the same species, or stray types. The certification program sets strict limits on the number of each type of rogues that can be allowed, depending on the grade of the seed. The continuous presence of cross types in a variety will cause a decline in the genetic purity of the variety. This type of deviation can occur due to the presence of recessive genes in the heterozygous condition at the time of the release of varieties, or arising from mutations. In addition, the type of intersection can also occur due to the presence of voluntary plants that arise from seeds that are planted accidentally from mixing other seeds during production. This type of intersection can also occur because the plants have a wide morphological diversity, or the seeds used are derived from crosses, especially crosses with wild plants in the process of making a new variety. Roguing is a technique used in seed production to maintain varietal purity. Roguing is carried out by conducting inspections and removing plants that have different characteristics from the variety being propagated. Roguing is carried out for other crops, intercropping types, diseased plants and noxious weeds, so that the certification requirements can be met. In the certification process, roguing is followed by field inspection by the seed certification officer. Roguing is also important even though the seeds produced are not certified seeds. Roguing and field inspection require skills in implementation, for example:
   a. Characteristics (description) of the propagated variety.
   b. Characteristics of the intersection type.
   c. Seed-borne disease which is difficult to control with seed treatment.
   d. Weeds that are harmful, less harmful, and commonly grown.
   e. Another commonly found plant.
   f. Plant abnormalities including nutrient stress, temperature and soil moisture [6].

8. **Detasseling**
   Plucking male flowers from female flower plants.

9. **Integrated pest and disease control (IPM)**
   The quality of seeds can be seen from factors such as the correctness of the variety and the purity of the seed (genetic quality), vitality (germability and growth strength) or physiological quality, free from pests and diseases, and physical quality [27].
10. Harvesting
Harvest on the right time and process manually or with tools and machines. After harvesting, the corn is peeled from the cob. To produce good seeds, the cobs are selected. The selection of cobs was carried out before drying the cobs, namely separating moldy or broken/damaged cobs from intact cobs. Whole cobs are dried to a moisture content of 17% then crushed and sorting the seeds with a sheller that has been designed so that the seeds do not break in the shelling process.

11. Packaging
Packaging is done to maintain the shelf life of the seeds. Before packaging is carried out, it is necessary to test germination, moisture content, purity, other color seeds and seed impurities carried out at the Seed Laboratory. The moisture content of packaged seeds is 10–11%.

12. Storage
Seeds are stored in a storage room equipped with cold storage at a temperature of 18-21°C and a relative humidity (RH) of 55-65%. These technological components are an absolute requirement in producing hybrid corn seeds, if one of them cannot be fulfilled it will result in the low quality of the seeds produced [23].

3. Supervision of Hybrid Corn Seed Production
In order to produce high-quality seeds, there are at least two things that must be done to fulfill this, such as internal quality control and external quality control.

3.1. Internal quality control
The development of internal quality control system within the institution starts from the selection of parental seeds for source seed production, in the production process, harvesting, processing, packing, storage, and testing of seed viability and vigor in storage. Observations were made on germination rate, growth speed, growth uniformity, ratio of length and weight of hypocotyl-root, and dry weight of germinated seeds.

3.2. External quality control
To obtain a seed certificate, the producer must first submit an application to the local Seed Supervision and Certification Center (BPSB) by filling out the form provided. The form includes information related to the location, and the planned planting date. After the location is reviewed by BPSB and gets approval, then preparations are made for planting at the site. After planting, it is informed back to BPSB to inform that the planting has been carried out (planting date). During plant growth, BPSB will conduct field inspections to assess feasibility and remove undesirable plants. Seed certification activities are carried out to obtain supervision from the local seed supervisory center, it is expected that the program carried out will obtain products/seeds that comply with BPSB SOP standards. Based on PP no. 44 of 1995 on Plant Seed Supervisors in the guidelines for the Certification of Food Crops and Horticulture Seeds who are authorized to:
1. Inspecting the production process.
2. Inspecting the facilities and places of storage as well as the packaging method of cultivated seeds.
3. Take seed samples for quality inspection.
4. Checking documents and records of producers, suppliers and distributors of seed development.
5. Inspect the implementation of certification activities.
6. Inspect the fulfillment of requirements for registration, procurement, licensing, certification and registration of seed distribution.
7. If the seed supervisor has a strong reason that there has been a deviation regarding the quality of the seed but requires further research on inspection, the seed supervisor can temporarily stop the distribution of seeds but requires further research on the results of the inspection, the seed supervisor can temporarily stop the distribution of seeds for a maximum of thirty days.
8. If the time has elapsed and there has been no decision on the existence of irregularities, then the act of stopping the distribution of seeds by PBT ends by law.

9. In the event that deviations are found regarding the production process, quality standards, certification activities, storage facilities and places as well as seed packaging methods, PBT may propose withdrawal of seeds from distribution to the Minister of Agriculture.

4. Social Economic Changes of Hybrid Corn Farmers

The agricultural development through technological processes in the field of agriculture is a dynamic of society which results in certain changes in its socio-economic life. As stated in [14] the innovation in technology has a lot of influence on developments in society. Therefore, the agricultural development, especially the production of hybrid corn seeds, was initiated by new technological innovations in agriculture. This can affect the socio-economic field of farmers. So that it causes changes in certain aspects even though at different levels of intensity. The changes occur in the farming community for hybrid corn seed production.

4.1. Changes in Social Aspects

The most basic social unit for farmers in their lives is the family. Changes that occur in society can be seen in changes that occur at the family level, even in farming communities in general. The occurrence of social changes and even orientation among farmers was developed solely to meet their daily needs. In addition, changes in a social system are a result of the acceptance or rejection of an innovation. However, the changes in behavior that are seen are generally planned and occur in attitudes, experiences, perceptions of the community and can even be a reflection of changes that occur in the community structure. As stated by [25] are as follows:

Problems related to farmers' lives (in this case the farmer's economy) can be investigated by reviewing the basic unit in the relationship between farmers and the community. Because farmers live in a cultured system, they have social relationships that need to be cared for through certain ceremonial activities such as wedding parties, thanksgiving for successful harvests and funeral ceremonies. This means that from the production produced by farmers, a budget must also be prepared to carry out these activities. Only in this way farmers can live in the midst of society.

Social changes that are very prominent in farming communities are changes in community structure which involve changes in the position of social groups who have a role and power in determining the direction and movement of these changes. On the other hand, the modernization process that changed farming society to a modern direction received a strong impetus for the commercialization of agricultural products, the new transformations that followed, the bureaucracy, and education that was very much needed by the people who were in the process of change. It is not surprising that these changes lead to a shift in the roles and functions of old institutions to new ones. In such conditions, the role of the elite (in this case is represented by farmers who have a higher education) and on the one hand there is a traditional elite represented by the landlords and all the accompanying groups, and maintain their social status.

4.2. Changes in Economic Aspects

Another very prominent change after the development of hybrid corn is the increasing welfare of farmers as a logical implication and the application of five farming businesses which include superior seeds, fertilization, intensification, improving agricultural land management and strengthening the existence of corporations in agricultural areas. The changes in agriculture will basically affect other fields. Agricultural development is directed at the development of advanced, independent and modern agriculture. Thus, it can be said that agricultural development aims to increase the yield and quality of production, as well as to increase the income and standard of living of farmers independently. In addition, the development of the agricultural sector in rural areas has a decisive role in national development. Also, the development of the economic sector with the main goal of achieving a balance between the agricultural sector and the industrial sector.
5. Social Constraints of Hybrid Corn Seed Production

Based on the regulation of the Minister of Agriculture No. 39 on 2006, the quality control mechanism in seed production can be carried out through:

a. Seed certification system, namely planting supervision and/or laboratory testing by BPSB or
b. Application of a quality management system or
c. Product certification. The Agency for Agricultural Research and Development in 2003 has established general guidelines for the management of plant source seeds that adopt the principles of a quality management system according to SNI 19-9001-2001 or ISO 9001:2000 which is also adapted to current conditions.

In fulfilling both quality and quantity requirements, there are still obstacles faced in the production of hybrid corn seeds. The production of hybrid corn seeds requires technological requirements, quality control and important steps that must be carried out. Some things that need attention before producing hybrid corn seeds are:

a. Production should be done on fertile land.
b. There are sufficient and easily accessible water sources if needed to irrigate crops at any time.
c. Not a pest/disease endemic location.
d. The location is isolated from other corn varieties. Isolation can be done based on time (3-4 weeks) and minimum distance isolation within a radius of >300 meters.
e. Conduct good coordination with BPSPT, for example reporting on prospective locations, parent strains planted, varieties to be produced, planting date, roguing, detasseling, harvest date.

Some obstacles that are often encountered in producing seeds include the following:

5.1. Discussion on determining the production area

Determining the production area is not an easy thing to do, especially if the location is a center for the development of ordinary corn plants. The land to be planted must meet the distance and time isolation requirements. This is to prevent cross-pollination between corn plants. If cross-pollination occurs, it will be fatal to the yield of seeds produced or the seeds become impure/contaminated with corn around the production area. The allowed isolation distance is not less than 200 meters, while the allowed isolation time is the difference in planting time for 3 weeks with corn plantings around seed production plants.

To meet the distance and time isolation requirements, consultation between nearby farmers is needed to determine the planting schedule, the aim is to set the distance between planting the parent strains and ordinary corn plants around the seed production area. Various response are often found in discussion with farmers in determining the planting date, there are farmers who sincerely follow the schedule that has been determined, there are also farmers who deliberately refuse and some even strictly refuse to schedule the planting date because there is no cooperation between ordinary corn farmers and seed producing farmers. Therefore, it is necessary to involve the local government to conduct more in-depth directions regarding the rules for the dates of planting.

5.2. Attitude of seed producers towards the implementation of roguing

Roguing is an activity to identify and eliminate undesirable plants. The purpose of this activity is to maintain the purity and genetic quality of a variety. Characteristics of varieties can be used to identify the off-type plants. The stages of roguing implementation are carried out three times during production, including:

a. The first roguing was carried out 7-15 days after planting by checking stem color, plants growing outside the desired plant row, leaf shape, and non-uniform plant height.
b. The second roguing was carried out 32-35 days after planting (vegetative period) by checking stem color, leaf shape, leaf texture, and leaf blade shape.
c. The third roguing was carried out at 45-52 days after planting to check the color of female/male flowers, panicle shape, cob position and unwanted hair color.
In the implementation of roguing, a firm attitude and honesty are needed in making decisions to revoke or dispose of plants that are different and not in accordance with the expected plants. In this case, close supervision is needed because sometimes farmers deliberately let them grow even though the plants are somewhat different with the reason that if they throw too many plants it will reduce the total production.

5.3. Timeliness in the implementation of detasseling
Detasseling is an activity of removing male flowers on female parent plants which is carried out before the male flowers bloom. Male flowers are ready to be removed when the cob is half-filled, at the age of 47-49 days, where the flag leaves are not open (already round and standing upright).

Some research about the effect of detasseling were conducted by [30], [12], and [9]. According to [30], removal of male flowers has no effect on pollination of corn plants. Meanwhile, according to [12] and [9], detasseling has an effect because nutrients or photosynthetic results which usually lead to the formation of male flowers are transferred to the part that will be harvested. However, basically the detasseling activity is carried out in the context of refining corn plants for seed production, where the desired male pollen from male plants is expected to be preserved to maintain its existence and male pollen on female plants is removed/discarded to purify it in order to create superior genes.

Detasseling treatment was carried out because pollination in corn occurred when pollen from male flowers attached to the cob hair. Nearly 95% of the pollen comes from the pollen of other plants, and only 5% comes from the pollen of the plants themselves. Thus, optimizing the absorption of nutrients for the formation of corn cobs. The number of plants that are detasseling will also affect production results because female plants rely on the effectiveness of pollination from male plants in addition to the number of populations affecting production results [8]. The techniques for cutting male flowers on female plants are as follows:

a. Discard the male flowers on the female parent plant when the flag leaves have not opened and the male flowers have not broken.

b. Remove the male flowers on the female parent by hand and should be done in the morning.

c. Perform selective removal of male flowers on all female plants, lest any are left behind so that the pollen does not fertilize other female plants.

In the implementation of this detasseling, discipline and honesty are needed towards the implementer of seed production, if it is time for the male flowers to be removed/discarded, they should be followed up immediately, the implementation time should not be delayed because if the revocation is delayed, the male flowers will bloom and will pollinate itself, resulting in failure in seed production. This phase requires continuous monitoring during the active pollination period. There are some producers who still underestimate this process. Changing the behavior of producers is not easy so it is common for the supervisory team to acquire additional escort teams in the implementation of detasseling so that the implementation of seed purification can be conducted as expected.

6. Economic Aspects of Hybrid Corn Seed Production
Seed supply institutions managed by the government and the private sector often experience a lack of resources so that they have not been able to meet the needs of hybrid corn seeds in a timely and targeted manner. This of course requires efforts to meet the needs of these seeds appropriately. In the upstream sector, individual farmers who are members of the group to cultivate corn production until harvest under the supervision of the Center for Seed Control and Certification (BPSB). One of the seed production businesses were managed by farmer groups in Gowa and Takalar districts.

The role of seeds greatly determines the production capacity that will be produced and the development of agribusiness, so the use of superior varieties in accordance with consumer preferences and a sustainable seed production system is very important [1]. Increased corn production can be done through the use of quality hybrid seeds. Hybrid varieties are superior varieties resulting from plant breeding which are proven to be able to produce 15% better than free pollinated varieties [24]. Efforts to increase production and productivity to achieve production targets in the following year. One of the
efforts that can be done in increasing the productivity of corn is by using quality seeds. Efforts to improve seed quality are an important part in increasing the competitiveness of hybrid corn seed products. Improving the quality of hybrid corn seeds is a part of the strategies to increase national corn productivity [15]. In encouraging the seed industry, the use of quality seeds is an important aspect because it can increase production cost efficiency and increase seed productivity and quality [5]. Corn production requires the support of quality seeds in sufficient quantities. The combination of superior seeds with hybrid varieties is an attraction for private seed companies that play a role in multiplying and disseminating quality seeds so that sufficient quantities can be met.

Hybrid corn seed farming is very profitable for farmers because it has a high selling value, the maximum productivity of pure strains is usually only 2 tons per ha, but the selling price is relatively high, this is according to the results of research conducted by [21] which states that farming of hybrid corn seeds is very profitable for farmers. The profit obtained can reach Rp. 37,975,000. -/season. If in one season the farmer earns an average profit of Rp. 37,975,000, - then in one year (two seasons) the farmer can earn a profit of Rp. 75,950,000, - or if the average income of the farmer is Rp. 6,329,166.67/month, however, not all farmers are interested in breeding seeds because in addition to the complexity of the technical aspect, sometimes they also face obstacles in the economic aspect, including:

6.1. Limited capital for hybrid corn seed farming
To start a business, of course, requires capital which is sometimes quite large, medium or small, depending on the type of business to be run. In breeding hybrid corn seeds, there are several things that require a lot of capital, including:
   a. The purchase of seeds for male and female strains is rather expensive, so there are rarely farmers who are interested in doing cultivation.
   b. The use of labor that is classified as highly intensive in the implementation of planting, roguing, detasseling and processing.

6.2. Limited marketing system
The marketing system for hybrid corn seed production is not allowed to be sold freely so that the marketing of products is restricted to the seed licensor who has given the authority to label and certify until the distribution of the product. So if there is no collaboration between the seed licensor and the hybrid seed producer/cultivator, the seed from cultivator cannot be sold.

7. Conclusion
Quality seeds are an absolute requirement in an effort to increase the production and productivity of hybrid corn. To obtain quality seeds, internal and external monitoring is required in accordance with the management of seed quality standards. In producing seeds, there are two obstacles that are often faced, including social constraints in setting distance and time isolation, roguing and detasseling. Economic constraints are caused by limited capital owned by farmers and the marketing system that is bound by the rights of seed licensors.

8. Suggestion
To the government to always take various steps and policies that can support farmers in dealing with their problems. It is hoped that the government's support in determining the mapping of the seed area so that it can guarantee the purity of the plant in seed production.

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