



Youth Empowerment for Productive Economic Efforts in the Use of Coconut Charcoal Shells

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Abstract

The use of coconut fruit waste (coco nucifera) is still very open to be studied and further developed in Indonesia as a tropical country that has very abundant natural resources to be utilized optimally. This is also considering that although almost all parts of the coconut fruit have been taken advantage of, many are also wasted into waste such as the fibers and shells. One of the uses of coconut shells is used as charcoal fuel. Coconut shell charcoal is usually further processed into briquettes and until now is used by the community for household, business, and industrial purposes. The use of coconut shells can be done to overcome wastewater. Changes and village building initiatives must grow from young people or millennials who act as agents of change. The research approach used is a type of pedagogic approach that leads to providing a description of the object of research and its relation to everything studied in the form of interviews and the results of the author's observations during the activity and after the activity. In this study, a qualitative descriptive design type was used. Researchers are trying to obtain and describe data about this service activity in the form of Training on Making Shells into Charcoal with the theme "Training on Making charcoal into shells in Kedung Soka Village, Ampel Island District, Serang Regency, Banten Province, Indonesia".

Keywords: economy, productive, entrepreneurial, coconut shell

Introduction

The development of youth empowerment for creative and entrepreneurial efforts needs ongoing continuity. Youth empowerment is needed so that they become skilled and have skills in the field of entrepreneurship. One of the things that is done to young people in Kedung Soka Village, Ampel Island District, Serang Regency through training on making quality and quality coconut shell charcoal as a form of increasing human resources in youth, to create something new that is valuable and useful for themselves and others. Youth entrepreneurship development is a mental and mental attitude that is always active and creative to improve the skills of youth to become independent youth by providing training, coaching and mentoring.

There needs to be coaching and empowerment for today's youth such as building an entrepreneurial spirit and inviting them to build their territory, take advantage of natural wealth and create new jobs. This is a big challenge and if this is successful then they will be empowered in building their villages and lifting the economy of the youth in their region.

Starting a business, indeed, must go through various studies such as making a business plan that aims to get information on the feasibility of a business, whether the business can be implemented and has economic value or makes money. The things that are done as exploration efforts are related to the market, the availability of raw materials, and the availability of human resources, as well as the skills that must be possessed to start the business.

The choice of business start-ups, namely the provision of quality and quality coconut shell charcoal is based on the idea that the potential use of coconut fruit is only for household purposes available in traditional markets around the coastal area of Kedung Soka Village to anyer and bojonegara which according to wikipedia is about 9 units, and quite large are labuan



market, Carita Market, Sirih Market anyer market, Merak Market, Pulo Ampel Market, and Bojonegara Market in Serang Regency. Coconut shell waste is relatively not traded. Some take it as fuel for restaurants and satay stalls. Such a large amount of coconut shell waste needs to be used for productive activities that can increase economic value and can be utilized by local residents. But what must be considered is the willingness of the youth to comb the traditional markets to get coconut shells, as raw material for shell charcoal.

Coconut shell processing technology is also relatively simple and can be implemented by small businesses. Likewise, the coconut shell charcoal market has great potential and the research team has also explored business partners of coconut shell charcoal suppliers who can work together starting with the development of quality coconut shell charcoal and quality, and in the future if this business is carried out it can accommodate all the charcoal produced. The selection of the Pulo Ampel area is also very strategic because there is the advantage of a large enough land facility that can be used for work centers for local residents to conduct training on making coconut shell charcoal and in the future it can also be used for the next fostered business unit if the community can respond to this business.

Development of innovations in the use of coconut shells made into activated carbon which can function as an adsorbent or deterrent to impurities contained in water or liquid waste processors. One method to reduce environmental pollution is the adsorption process, which is the process of absorbing contaminants in water using activated carbon porous materials. (Allwar, Md. Noor,A., Nawi,A., Khalil,A., Suryani, 2009)

In addition, the use of coconut shells can be done to overcome wastewater. Pollution of water bodies can be handled by proper handling of waste before discharge into water bodies. Anaerobic wastewater treatment is often chosen because it has many advantages. Some of the advantages of anaerobic processing such as the production of sludge is small, the amount of energy used is small, as well as the potential for energy that can be produced in other forms. This wastewater treatment has the potential to produce biogas. The stability of biogas production in anaerobic wastewater treatment can work less optimally due to organic matter disturbances.

The use of coconut shell charcoal in water treatment certainly needs to pay attention to the technical aspects. The aspect of media saturation level is important in the application of coconut shell charcoal in sewage treatment. This saturation media indicates that it is time for the media to be removed from wastewater treatment and replaced with a new medium. Each medium will respond to different levels of saturation to different parameters. For example, the response of coconut shell charcoal to absorb organic matter or Chemical Oxygen Demand (COD) which is different when absorbing ammonia. The particle size and composition of the two parameters will determine how long the coconut shell charcoal can be saturated. The saturated condition on a medium can be indicated by the same concentration value between before and after the process at a given contact time.

The location of this training was chosen, namely in Kedung Soka Village, Ampel Island District, Serang Regency. The reason for conducting research in Kedung Soka Village, Ampel Island District, Serang Regency is because the villagers have a livelihood as factory workers and farmers. The biggest farm is coconut farming which is taken only coconut meat for oil use by companies near the village as for waste from coconut shells is thrown away in vain and not used.

Coconut Tree and Coconut Shell

Indonesia is an agricultural country that has great potential in growing vegetables, fruits and coconut trees. Indonesia is also an archipelagic country, making it easier for coconut trees to grow and survive. Indonesia is said to be a tropical country with a very abundant diversity of



natural resources, one of which is coconut trees which have many benefits for the people of Indonesia. (Samsiro, 2009)

Coconut fruit is a fruit with a large and hard shape consisting of coconut husk, coconut shell, coconut flesh and coconut water. Coconut husk is a fibrous material with a thickness of 5 cm and is the outermost part of the coconut fruit. The coconut shell, also called the coconut shell, is located after the skin and coconut fibers are approximately 3.5 mm thick with the ukuran following the coconut fruit itself. The weight of the coconut shell adjusts to the coconut fruit with a weight between 15-19 coconut weight.

The use of coconut is currently still being studied and developed further. Coconut bars can be used for the manufacture of home sills. Coconut roots are used as wood. Coconut leaves are used for households like brooms. Coconut fruit is used as a source of life. Coconut water for drinking, coconut fibers and coconut shells are used as charcoal making. This is also a reminder, although almost all parts of the coconut fruit can be taken advantage of, many are also wasted into waste such as coconut fibers and coconut shells.

Nowadays, coconut fibers can be used to start a fire before burning coconut shells and coconut shells are used as fuel known as charcoal. Coconut charcoal is the hardest coconut shell but can produce the best quality charcoal compared to charcoal made from wood and other fuels, so coconut charcoal is a commodity for people to cook.

Charcoal from coconut shells is relatively more sought after by consumers than charcoal made of wood or other materials. Charcoal from coconut shells contains sources of activated carbon, electrodes and carbon so that this charcoal is carried out continuous research to produce the best quality of this shell charcoal. The development of innovations carried out on coconut shells is used as carbon absorbent control material that has Charcoal from coconut shells is relatively more sought after by consumers than charcoal made of wood or other materials. Charcoal from coconut shells contains sources of activated carbon, electrodes and carbon so that this charcoal is carried out continuous research to produce the best quality of this shell charcoal. The development of innovations carried out on coconut shells is used as carbon absorbent control material that has water. (Hartanto, 2010)

Basically, the manufacture of charcoal from coconut shells has long been used. In a study, it was found that the chemical composition contained in shell charcoal that tastes from coconut shells is 74.3% C, 21.9 O%, 0.2% Si, 1.4% K, 0.5% S and 1.7% P. So that charcoal derived from coconut shells can be used as fuel and as a source of activated carbon.

To better know from the characteristics of charcoal derived from coconut shells, which can be used as fuel, it is necessary to understand the physical properties and chemicals contained in it such as mixed materials, density, structure, morphology and chemical texture, then the changes that occur in charcoal coming from coconut shells must be carried out a heating process and in this case the heating is carried out by burning first.



The change that occurs in coconut shells into charcoal is residual carbon and has a fixed ash content but does not have saturated carbon content. The visible change from coconut shells to charcoal is the loss of the content of mixed materials and vapor-prone ingredients. When compared to charcoal made from wood or corn kernels that range from 12-20%. (R.H Huluk, 2009)

In this activity, the coconut shells chosen are from old coconuts and the shells have a brownish color. The reason for use in old shells is because: Old coconut shells are easier to burn, old coconut shells are easily separated from coconut fibers; Old coconut shells are easier to clean; Old coconut shells are easy to get because the coconut is widely used by mothers, especially for kitchen purposes; Old coconut shells have good quality in charcoal from burning; and Coals of old coconut shells are more durable when they become charcoal

This is different from young coconut shells, where young coconut shells are softer than old coconut shells, besides that the quality of charcoal is also not good. When separated between fibers and shells, it is more difficult because sometimes the attack on the coconut is tightly attached to the shell.

Activated Charcoal from Coconut Shells

Basically, the advantage of charcoal derived from coconut shells is because coconut shells have good thermal diffusion properties when compared to other charcoals such as wood charcoal, corn charcoal or leaf material charcoal so that charcoal derived from coconut shells is more likely to be a household fuel for cooking. In the researcher's observation, the quality of charcoal material derived from coconut shells if charcoal is to be made, the good quality of charcoal is an old and dry shell, clean from the remnants of fibers and no mixture of other materials / not dirty. Therefore, before making charcoal derived from coconut shells, it needs to be cleaned and dried in the sun first. The main characteristic of coconut shells is said to be old is their deep brown color and clean of fibers.

If you are going to make charcoal from natural ingredients such as bone, petroleum, coal, coconut shells, olive seeds, sawdust and peat, it is all called activated charcoal. Activated charcoal is not the same as ordinary charcoal used for baking and so on. Ordinary charcoal has maximum yield in combustion and is more durable for its embers. Activated charcoal is



generally powdered and more porous than ordinary charcoal. Activated charcoal has the ability to absorb chemicals and toxins in the body, while ordinary charcoal has a toxic substance.

There are several benefits of activated charcoal, including being able to cure people affected by poisoning. In the world of medical science it is explained that activated charcoal can be used to cope with poisoning and overdose. In addition, activated charcoal can also be used as a sedative.

Another benefit of activated charcoal is that it can delay or prevent aging. This reason is because activated charcoal has the function of absorbing residues in the body so that people who use activated charcoal for bathing, their body pores will open and open wrinkles on the skin so that premature aging does not occur.

Activated charcoal can also treat diarrhea. People affected by diarrhea can be treated easily. Diarrhea is caused by the influence of food or the presence of wind in the body (colds), it can also be due to the presence of germs in food, or the presence of germs on the hands of people who do not wash their hands before eating. Activated charcoal will absorb toxins that cause diarrhea and will then be excreted along with feces.

Activated charcoal has antibacterial, antifungal, antiviral claims, so it is able to help in cleaning and whitening teeth. The ability of activated charcoal to filter water. Activated charcoal can treat some skin diseases because activated charcoal contains antibacterial properties that can absorb harmful microbes that can create infectious or irritating wounds. (The results of the author's interview with the informant, the interview was conducted at 13:00 in the Aisyiah Kindergarten classroom)

Criteria for a good Coconut Shell for activated charcoal

Not all coconut shells can be made into activated charcoal. The criteria for coconut shells so that they can be processed into activated charcoal include::

1. Using shells or shells from completely old coconuts
2. It has a hard wood with a low moisture content.

Such criteria have the aim of accelerating and leveling the process of maturation and authoring. The nature of coconut shell charcoal is closely related to the number of pores in the shell and the size of the particles. The shape of the parameters in the charcoal making process, the pressure in the shell compaction process must be adjusted to the existing drum state. The combustion process in the shell must first use fire until it dies by itself and then cooled and should not be doused with chemical substances such as gasoline or kerosene, because it can affect the results of burning the charcoal which becomes the smell of gasoline or the smell of oil.

Results of Observations of Participants in Making Coconut Charcoal Shells

1. Preparation of Activities

a. Looking for raw materials

- Large drums used kerosene 5 pieces
- Lighter
- Dried coconut shell 5 sacks
- Indoor training rooms/classes
- Open space training/outdoor field

b. Participants of the activity

- 20 out-of-school children
- Children who have creativity but have not been channeled
- Children who have the spirit to do business
- Children who have the soul of a businessman



- All participants were 20 people, divided into 4 groups (1 group of 5 people)
- Each group was tasked with observing and cooperating in the practice of burning coconut shells into charcoal

2. Tasks of participants in general

- Record all information provided by the source
- There were 3 speakers; The first speaker discussed the theories of entrepreneurship, the second about a good marketing system and the third speaker discussed the practice of making shells into charcoal (theory and practice).
- After discussing the theory for 1 day, the second meeting discussed shells, charcoal and coconut
- The third and fourth meetings emphasized the practice of burning shells into charcoal
- The fifth meeting of observations and conclusions
- Observing all activities in burning shells into charcoal is the core of the participants' activities.

The coconut shell charcoal making activities carried out in Kedung Soka Village, Ampel Island District, Serang Regency, reached a conclusion. From the results of their observations during the training conducted during 5 meetings and each meeting was carried out 3 hours of training with details:

- Discussion about business and business benefits (day one)
- Batok, charcoal and coconut (theory) (second day)
- Charcoal making practice (third day)
- Charcoal making practice (fourth day)
- Observation of results and conclusions (fifth day)

The reason for doing community service in Kedung Soka Village, Ampel Island District, Serang Regency is because the villagers have a livelihood as factory workers and farmers. The biggest farm is coconut farming which is taken only coconut meat for oil use by companies near the village as for waste from coconut shells is thrown away in vain and not used.

Coconut shell waste that is not used is very useless and easy to find, therefore there is a special pond for the disposal of coconut shell waste. In general, people use coconut shells from the coconut market for perfunctory household fuel purposes such as for cooking and grilling satay / grilled fish. Even though this coconut shell has a lot of potential, in addition to being used for household fuel, it can also be used for souvenirs or other handicrafts. (The results of the author's interview with the village head of Kedung Soka Village, Ampel Island District, Serang Regency, the interview was conducted at the village office prior to the activity.)

The participants who attended during the activity were:

No Name of Participant Address Group Task Group Task Group

Table 1. Event Participants

No	Name of Participant	Address	Group	Task Group
1	Rifan Adim	Desa Kedung Soka	1	Head
2	Diki Hermawan	Desa Kedung Soka	1	Member
3	Kiki Hermawan	Desa Kedung Soka	1	Member
4	Ahmad Risnedi	Desa Kedung Soka	1	Member
5	Feri Darmawan	Desa Kedung Soka	1	Member
6	Ari Hidayatullah	Desa Kedung Soka	2	Head



7	Irfanul Iman	Desa Kedung Soka	2	Member
8	Alijaya	Desa Kedung Soka	2	Member
9	Mansur	Cibaga	2	Member
10	Jacky Setiawan	Sumuranja	2	Member
11	Ade Mukhlas	Cibaga	3	Head
12	Jasman	Cibaga	3	Member
13	Zulfitia Firmansyah	Cibaga	3	Member
14	Sayuti	Cibaga	3	Member
15	Faisal	Cibaga	3	Member
16	Dika	Cibaga	4	Head
17	Tio	Cibaga	4	Member
18	Zuher	Cibaga	4	Member
19	Iwan	Cibaga	4	Member
20	Jefri Purwadi	Cibaga	4	Member

Of the 4 groups, they worked together in each group to observe well from the beginning of the process of inserting shells into the drum, burning shells, smoking processes, cooling and opening drums resulting from combustion as well as selecting and sorting out good and poor charcoal quality.

From the observations, it was found that making coconut shell charcoal with the coconut shell process was collected first, then cleaned of sticking fibers and soil dirt. The coconut shell is inserted into the drum to produce the reactor to the brim and the drum that has been filled with shells and then burned the middle is tightly closed thus, the heating process occurs. Until the release of white smoke.



1. In making charcoal using coconut shells, it is recommended to use a large drum of used kerosene that has been cleaned. The large drum used is intended so that many coconut shells can be inserted and the drum when burning will not burn. The drum is opened on top and then put the shell into the drum which is then burned by the coconut shell at first, until the fire burns and smoke comes out.



2. When the fire on the shell is already lit, the drum is immediately closed. The drum cover must have air vents and smoke coming out to indicate whether or not the embers are burning on the drum.
3. Let the drum burn run for several hours until the black smoke on the drum turns white
4. An easy way to determine the charcoal made, whether it is finished burning or not, there is no need to open the drum cover because it is very hot and not easy to open but by paying attention to the characteristics contained in the smoke.
5. If the smoke emitted from the drum is thick and white, it means that the shell is at the drying stage. If the smoke emitted is thick and has a yellow color, it is a sign that the process of arboning on the shell is happening. Meanwhile, when the smoke gradually thins and is blue, it is a sign that the authoring process is almost complete. So there are three stages of smoke color; First the smoke is white, the second smoke is yellow and the third smoke is blue. In the early stages the smoke is usually pitch black because it mixes with fire.
6. After burning the charcoal, the outside of the drum can be doused with water and do not let water enter the drum or smoke and fire on the drum is forced to stop because it can result in poor and juicy charcoal quality results.
7. If the charcoal that has been burned has water, the combustion when the charcoal will be burned becomes difficult and must be dried in the sun first.
8. If the charcoal is burned using kerosene or using gasoline, then the charcoal will become smelly and the result will be less than optimal.
9. Before the drum will be disassembled and the charcoal will be seen, make sure the charcoal cools first. Activated charcoal sorting. Charcoal that has a glossy black color, is hard and intact and is brittle or easy to break is charcoal that has good quality.
10. If you want to make activated charcoal at home, you can replace the drum with a stove and do the authoring process outside the house using firewood. To be economical and durable.
11. It is also possible that coconut shells are burned directly until they become charcoal and the embers can be used to cook and burn kitchen needs.

The drum used in combustion should be made of iron with a thickness of 1.5 mm and a length of 60 cm and an inner diameter of 30 cm. At the base of the combustion chamber, there is an air hole that serves to supply air into the combustion chamber. The air hole is rectangular in shape. In general, the drum used for combustion has 3 layers of strength, namely the outer iron plate, asbestos and the inner iron plate. Asbestos is used as an insulator so that the heat in the drum room becomes perfect and the combustion becomes smoother and the result of the charcoal that has been burned is not destroyed so that with the utilization of asbestos, the result is more effective.

The drum testing method is carried out manually using custom power and when coconut shells are inserted by hand, this test is intended for carbonization so that the ignition of the fire from start to finish is characterized by the depletion of smoke coming out of the prepared hole. The smoke that has thinned indicates that the combustion process has been completed. After finishing the combustion, the top of the drum is covered with sand and the air hole is also closed using cloth material. This closure is done so that the air does not escape too much so that the embers in the drum can be extinguished and do not produce the smell of coconut shells.

The research conducted in Kedung Soka Village, Ampel Island District, Serang Regency is part of the educational tridarma activities that must be carried out by a lecturer. Among the implementation of this tridarma activity are as follows:



a. Internal meetings of the executors of activities

Preparations are made so that the implementation of activities can run well, determine the theme of the activity, determine the time and place of the activity, invite resource persons and other needs that will be carried out during community service activities.

b. Coconut shell charcoal yield

The coconut shell charcoal produced has good quality results The coconut shell charcoal produced has good quality results

c. Before the activity is carried out interpreneur socialization

Increasing public awareness to improve the economy was carried out by socializing and presenting / debriefing for the participants after the activity was completed. The implementation in the interpreneur activity initially encountered difficulties because the participants who attended did not match the initial target and plan, but over time the participants came. This is reasonable because the participants of the activity are young people who sometimes find it difficult to get up early and on time. Moreover, in this activity, it will build a dream in doing business on a home scale in the industry of producing charcoal from coconut shells.

The following are some notes and summaries carried out by the participants from the results of the activity, including:

1. The first group concluded that a good charcoal yield is preceded by a good shell and is not cracked/intact. A good shell means a shell that is old and brownish in color, not dirty and not many fibers. Shells that have good quality are hard to come by and in one sack not all of them are good. But from our group, we got nice, thick and fibrous shells.

From the observations we got, a good shell results in a good charcoal result. A shell that is cleaned in advance can cause good charcoal. Good charcoal means charcoal that is perfectly shaped with no changes or cuts when it is initially burned and after burning. Good charcoal also produces no odor, either the smell of medicine or the smell of kerosene/gasoline.

2. The result of the observation of the second group is that we did not find any obstacles in the activity of burning shells into charcoal. But we from group two saw the presence of smoke as a characteristic and a sign of whether or not the shell matured into charcoal. When the burning started, the fire burned so big that the smoke that came out was pitch black and this smoke seemed to disturb the neighbors of the house next door. Within a few hours the smoke was no longer too dense even though it was still black. This shows that the burning of the shells is still ongoing so that the smoke is still black.

When there was a change in color in the smoke, then we participants observed the ripeness of the coconut shells, whether they had really become charcoal. However, it can be concluded that the black smoke on the burning of the shell has not been said to be mature. Then we waited a few hours later, then the smoke became yellow, so we reopened the lid of the drum, it turned out that the yellow smoke on the shell that was burned showed that the combustion was almost evenly distributed.

in the next few hours, almost 5 hours of walking then the smoke turned white. When viewed in the drum, it turns out that the shells are perfectly burned and all have turned into charcoal. This means that the white smoke in the burning of the shell as a pointer to the shell has been cooked and has turned into charcoal.

When the drum feels no longer hot and has cooled, the drum is shed the contents and it can be seen that the shell has become charcoal perfectly. But it turns out that a lot of charcoal is destroyed and unevenly formed. In our observation, it is because when the shell is inserted at



the beginning of the burning, we put more than one sack and it looks full. Although in the end the shells burned all became charcoal.

3. The third group, with chairman jacky Setiawan, Ade Mukhlas, Jasman, Zulfita Firmansyah, sayuti and Faisal as members gave a conclusion about their observations related to making charcoal from coconut shells that making charcoal from shells is actually easy and can be practiced. However, due to limited experience and knowledge, we do not know the benefits of the coconut shells. The third group, with chairman jacky Setiawan, Ade Mukhlas, Jasman, Zulfita Firmansyah, sayuti and Faisal as members gave a conclusion about their observations related to making charcoal from coconut shells that making charcoal from shells is actually easy and can be practiced. However, due to limited experience and knowledge, we do not know the benefits of the coconut shells.

Making charcoal from coconut shells basically requires experience and cooperation. Experience can be obtained when we often burn charcoal from shells and may even be able to find other methods that are easier to burn besides using drums or can get more charcoal results from burning shells if they are burned using other larger media.

The teamwork that we have built, hopefully can continue until the manufacture of charcoal from coconut shells can be done independently. We are determined to try to do business in making charcoal from these coconut shells. From the experience gained in burning coconut shells and from the training from the speakers previously described, basically doing charcoal business is needed and there are many opportunities that can be obtained. There is no need for a lot of capital, no need to spend a lot of money on charcoal business modes that can be searched, because basically the existing shells are easy to get and almost a lot. Therefore, we in groups will try to be entrepreneurial by making charcoal from the coconut shells.

4. The conclusion of the group of four was obtained from the results that making charcoal from shells needs to have a mentor who can start and provide enthusiasm for us as beginners. Mentors are needed so that when there is a problem that has not occurred in burning charcoal into shells, it can be resolved easily. Mentors can also help us find players who can accept our business early in pioneering charcoal making from these shells.

5. As for the conclusion of the last group, it is the group of five. They give a belief that starting in entrepreneurship is difficult, especially not having experience from scratch as a businessman. However, from the information and explanations of the speakers about the business and wiruasaha of charcoal shells, it became clear and made us sure that doing business like this does not require large capital and costs, willingness and no shame to people is the main capital that must be owned.

It seems that starting an entrepreneurial shell into charcoal is very very difficult, especially in this village, not many have developed and done. No one has started in the collection of shells collected near the coconut oil factory, no one has yet become a collector of coconut shells in the markets near the village. But if we don't start, when else can we be entrepreneurial and do business. Hopefully this is our career path in starting a charcoal business made from the waste of shells from a former coconut factory and our hope is that in the future this business business can advance and develop not only in the village area, sub-district or even one Serang regency but can continue to grow so that everyone will look for coconut shell charcoal unless it is from us that the charcoal is shipped even more than that our village becomes a village known as Coconut Batok Charcoal Village.



Conclusion

From the results of observations and practices in the field regarding the manufacture of coconut shells into charcoal, it can be concluded that coconut shells or coconut shells are solid waste that cannot recycle by itself from processed coconut that has been taken coconut to be used as coconut milk. In general, coconut shells are used for fuel, household purposes and souvenirs. Kedung Soka Village, Pulau Ampel District, Serang Regency is a coconut shell producing area because there is a coconut oil factory and people's livelihood as coconut farmers.

To improve the community's economy for the better, coconut shells are processed into products that have high value and generate people's income. The problem that occurs from coconut waste, the people of Kedung Soka Village, Ampel Island District, Serang Regency, do not yet have skills in processing coconut waste.

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