

Wet rice cultivation in Indonesia

A comparative research on differences in modernisation trends



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By

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“Participating with the Kasepuhan traditions and the traditional leader is important because it makes life possible. If you are not willing to participate, it means you have to leave the community. But then it is far more difficult to take care of yourself and your family”

Bapak Radi, member of the *Kasepuhan* community

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Preface

The basis for this major thesis is a research, conducted in Indonesia. My stay in this wonderful country would not have been possible without the hospitality and help of many people and organisations.

During the months that I prepared the research, I followed some lessons in order to learn the Indonesian language. My teacher was Ibu Titek, and hereby I would like to thank her for her patience and helpfulness.

Next, I would like to thank the people of the *Kasepuhan* for their unlimited friendliness. Even though it was not always easy to communicate with each other, the people of the *Kasepuhan* always took plenty of time to explain everything I wanted to know about their interesting lives. Especially the two tribal leaders, Abah Anom and Abah Asep, have been very helpful in providing useful information. More specifically, I would like to thank Bapak Absor and Ibu Rianne and the rest of their family for being great hosts for the four months that I lived with them.

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Bas Bolman

Summary

Wet rice cultivation has been cultivated in Indonesia for more than one thousand years. Particularly during the last century, the yield per hectare and the total amount of irrigated hectares have risen significantly.

Wet rice cultivation is also practised in the southern regions of Gunung Halimun, West-Java. A small traditional community lives in these areas, who call themselves *Kasepuhan*. One of the most important features of their life is traditional wet rice cultivation. However, there are also farmers in the same area that practise a more modern way of wet rice cultivation.

How can we explain the fact that traditional wet rice systems still exists in this area, while the non-traditional and more modern systems are so close? Why are there differences between rural communities in relation to the integration of modernisation trends within wet rice cultivation? These are the central questions of this thesis.

Traditional leaders of the *Kasepuhan* allow the members of the community to modernise their way of life, as long as they do not break with the traditions. For a member of the *Kasepuhan* this means living in a traditional house; follow the sacred rules of *adat*; participate in traditional ceremonies; and maintain traditional wet rice cultivation and the agricultural customs in general. Modern influences are visible in the community however; some people have a radio or even a television since the completion of several hydro turbines in the area. In addition, the mobility of the *Kasepuhan* increases because some people do have a motorcycle.

The highest leader of the *Kasepuhan* has a decisive influence on decision-making processes within wet rice cultivation, such as the timing of ploughing, irrigation, sowing and harvesting. In the perception of the *Kasepuhan* farmers, he has the right to decide on these issues because the ancestors have determined that he is their leader and that his choices are to be accepted. Therefore, the power that is connected to traditional authority has an almost unlimited legitimacy.

Within traditional wet rice cultivation, there is only one harvest per year and selling rice is an absolute taboo. Sowing happens with rice branches and using chemical fertilisers and pesticides is not possible. Harvesting must be done with a specific traditional tool and threshing takes place in a hollow tree trunk. Per harvest, there is an average yield of two tonnes of high quality rice per hectare. Numerous ceremonies take place throughout the year such as *tebar* before sowing, *syukuran* for the protection of crops and *Seren Taun* as a harvest and thanksgiving festival.

Non-traditional wet rice cultivation in the same area implies two harvests per year. The rice is for self-sufficiency but the surplus serves as a commodity product. Sowing takes place with seeds from high-yielding varieties or traditional varieties; chemical fertilisers and pesticides are added to the field and harvest is done with a sickle. Threshing can be done in a hollow tree trunk or with machines. Per harvest, there is an average yield of three to four tons per hectare, of a lower quality of rice. For one year, this implies a total yield of six to eight tonnes of rice per hectare. A crucial problem is selling the rice, which is hard due to transportation problems caused by remoteness, poor infrastructure, and high costs.

Combining the field research with the literature study made clear that the *Kasepuhan* still cultivate their rice fields in a traditional manner because rice is the ultimate core of their identity. The cultivation process and the ceremonies that are related to it make them distinguishable and recognisable from other rural communities in the region. Traditional rice cultivation expresses their view of the universe that everything relates to everything. It is the key feature of the life of their ancestors; and being *Kasepuhan* implies living the ancestors' way of life. Traditional leaders have a responsibility to maintain the balance and harmony in

the universe and in the community. Their power is granted by the ancestors and therefore the members of the community will accept their decisions in any case. Introducing innovations in rice cultivation might disturb this balance and cause disaster. Moreover, the *Kasepuhan* way of life offers social security in an area where economic certainty is hard to achieve. A *Kasepuhan* farmer relies on the agricultural knowledge of the traditional leaders; these leaders rely on the blessings and advice of the ancestors. In case of trouble such as a failed harvest, members of the *Kasepuhan* can rely on food donations of the leaders. Farmers of the non-traditional system in the same area cannot rely on these benefits; moreover, earning money with selling rice is problematic due to remoteness and consequently high transportation costs.

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Chapter one

Introduction

This thesis is the result of a field study conducted in West-Java, Indonesia. From November 2004 until the end of February 2005, I lived with the people of the *Kasepuhan*, a traditional rural community. The thesis is combined with an internship, focusing on the interaction between local authorities and the *Kasepuhan*. In order to get more information on this topic I regularly visited the Agency of Agriculture, Crops and Food (*Dinas Pertanian Tanaman Pangan*) of the district of Sukabumi. The results of the internship can be found in a separate report¹.

The internship report concentrates on how the traditional wet rice cultivation of the *Kasepuhan* is influenced by modernisation trends from outside, for example by the Agency of Agriculture. This thesis focuses on the possible integration of modernisation influences from inside the *Kasepuhan* community and influences from modern wet rice systems that are in the vicinity. It will become clear that the *Kasepuhan* keep on practising traditional wet rice cultivation because it is the core of their identity. Traditional authorities are very reserved with the introduction of innovations, because being *Kasepuhan* implies living the ancestors' way of life. Traditional leaders have to maintain the balance and harmony in the community; innovations in rice cultivation might disturb this.

The people of the *Kasepuhan* are living in the area of Gunung Halimun National Park, West-Java. Some groups are living inside the Park, some of them just outside the Park and others have spread across West-Java, Java, or other islands of Indonesia in order to adapt to a more modern way of living. In the southern area of Gunung Halimun, the differences between the non-traditional group and the traditional group of the *Kasepuhan* are quite diverse.

Contrary to the non-traditional groups, the people of the *Kasepuhan* still follow a traditional way of life. This means, among others, living in small houses of wood, bamboo and palm leaves, cooking on fire, participation in many ceremonies, and following traditional rules. Another characteristic of the *Kasepuhan* is their self-sufficiency in relation to food. By far the most important crop is rice, which is cultivated in wet and dry forms.

Wet rice cultivation is by far the most important way of sustaining a living for the *Kasepuhan*. About ninety percent of the rice they produce comes from the horizontal fields; ten percent comes from cultivation on the slopes of mountains. Moreover, their way of cultivating wet rice has remained more or less the same for hundreds of years. Therefore, we will call this 'traditional wet rice cultivation'. It can be characterised, among others, by only one harvest per year and the utilisation of specific traditional tools on the fields. Moreover, selling rice is an absolute taboo for members of the *Kasepuhan* community.

In the same area, there are also non-*Kasepuhan* farmers that practice a more modern way of wet rice cultivation. This implies two harvests per year, and 'modern' tools for the cultivation process, such as machines for threshing the grains. Farmers use a part of the harvest for self-sufficiency and sell the remaining part.

Traditional wet rice systems still exist in this area while non-traditional and more modern systems are in the vicinity. The cultivation process has remained almost unchanged, despite efforts of the Agricultural Agency to modernise the system. Which explanations can we find from within the *Kasepuhan* community for maintaining traditional wet rice cultivation? Why are there differences between rural communities in relation to the integration of modernisation trends within wet rice cultivation? These are the central questions of this thesis.

¹ See appendix 11 for a summary of the report. Consult Bolman, 2006 for the full internship report.

In order to answer these and other research questions, the thesis is split up into six other chapters.

Chapter two includes a general exploration of the developments within wet rice cultivation in Indonesia. Due to several developments during the last century, the yield of rice per hectare and the total amount of irrigated hectares has increased significantly. These developments have radically changed the utilisation and management of wet rice cultivation in most areas of Indonesia.

In the third chapter a theoretical framework is presented that assists in understanding why traditional rural communities in Indonesia do not always follow modernisation trends. Key concepts such as identity, tradition, *adat*, cosmovision, traditional authority and its legitimacy are defined.

The fourth chapter deals with the methods and techniques of the research. The statement of the research problem is worked out more precisely in this chapter. Moreover, the research question and sub questions are presented, together with the research location and population. Lastly, the methods and techniques of collecting field data is explained.

In the fifth chapter we are concentrating on the community of the *Kasepuhan*. A social-economical analysis will make clear what the main characteristics are of their way of living. We will also look at the traditional authorities of the *Kasepuhan* in this chapter. Another important aspect is what the *Kasepuhan* regard as being part of their traditions. The chapter ends with the practical and symbolic meanings of rice for the *Kasepuhan*.

In the sixth chapter a framework is presented in order to analyse the processes within traditional and non-traditional wet rice cultivation. After the analysis we can compare both systems, and understand why there are differences and similarities between them. Moreover, we can also explain how they influence each other.

In the last chapter the different parts of this thesis are reviewed. Continuing, the sub questions and the main research question of chapter four are answered. The thesis ends with some important conclusions on the integration of modernisation influences in wet rice cultivation.

Chapter two

Wet rice cultivation in Indonesia

2.1 Introduction

The main goal of this thesis is to compare traditional wet rice cultivation with non-traditional wet rice cultivation in West-Java, in order to explain why rural communities do not always follow modernisation trends in wet rice cultivation.

In this chapter, the general developments within wet rice cultivation in Indonesia are analysed. Nevertheless, these developments are certainly not applicable in all areas of Indonesia. The *Kasepuhan* for example, a small rural community that is living in the mountains of West-Java, is one of the exceptions. Their utilisation and management of wet rice fields shows many similarities with the way in which wet rice fields were cultivated many centuries ago. The question arises then, why rural communities in Indonesia do not always follow modernisation trends considering wet rice cultivation. To answer this question, it is necessary to compare traditional with non-traditional wet rice cultivation. But before we can compare these systems and understand why considerable differences do exist in relation to the stage of development of wet rice systems, it is essential to understand the connection between historical and contemporary developments within wet rice cultivation. Explaining this is the main goal of this chapter.

First, we will start with describing some global aspects of rice cultivation and how important rice is as daily nutrition and employment for the Indonesian population. After that, we will look at the historical developments of wet rice cultivation in Indonesia. As said above, quite some methods and techniques used centuries ago for the cultivation of wet rice fields are still being used today. The chapter continues with an analysis of the characteristics of wet rice cultivation. Here too, it is remarkable that many of these characteristics have remained more or less the same over many centuries. Next, we will focus on modernisation and innovation processes in wet rice cultivation. It will become clear that the combination of large-scale irrigation systems, the introduction of High Yielding Varieties of rice and new fertilizers made it possible to increase the yield per hectare considerably. After that, we will concentrate on the social aspects around wet rice cultivation, first considering the organisation of labour on the field and second considering the management of both communal and public irrigation systems in Indonesia. Finally, the chapter ends with some conclusions.

2.2 General aspects of rice cultivation

2.2.1 Two main forms of rice cultivation

Rice (*Oryza Sativa*²) can be cultivated in two different ways. The first one is swidden cultivation; the second one is wet cultivation. The swidden method implies that rice is cultivated directly on the slope of a hill or a mountain. Wet rice cultivation is practised on a horizontal field, which is irrigated almost continuously. In areas with hills or mountains, terraces are made to create the horizontal fields.

The two systems differ in several manners from each other. The most important differences are irrigation and yield. Wet rice cultivation demands man-made irrigation systems, so the ability to control the amount of water on the field is higher compared to swidden rice cultivation. Floods that might occur in the rainy season are also controlled more effectively through a complex of wet rice fields (Van Setten van der Meer, 1979:21). Controlling floods is less effective with swidden rice cultivation, so the risk of crops that wash away is higher. The extra control within wet rice cultivation also implies that the yield of wet rice cultivation is generally more reliable (Geertz, 1963:36).

² Source: Winkler Prins, 2002

2.2.2 Global aspects of rice production

The different variances of rice are suitable to be cultivated in different climates around the globe, varying from desert, hot, humid, flooded, dry and cool conditions, and grows in saline, alkaline and acidic soils (FAO, 2004). Around the world, about 7,000 varieties of rice do exist. Their growing period can vary from 80 to 170 days, depending on climate, altitude, irrigation methods, and fertility of the soil (Winkler Prins, 2002). The largest producers of rice are China with a production of 166 million tonnes, India with 133 million tonnes and Indonesia producing almost 52 million tonnes (FAO, 2004)³.

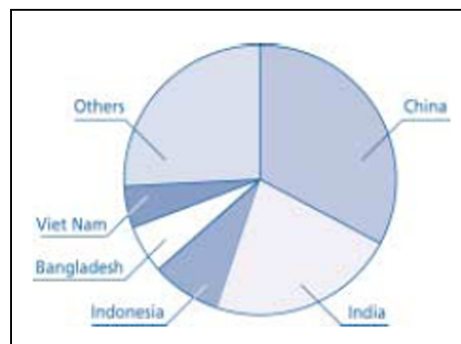


Figure 2.1: top ten rice-producing countries (FAO, 2004)

Rice is an essential part of the daily menu of more than half of the world population. In Asia alone, more than two billion people obtain 60 to 70 percent of their calories from rice and its products. In Africa, rice is the most rapidly growing source of food. In rural areas of developing countries, estimations make clear that nearly one billion people are employed in relation to rice-based production systems and their associated post-harvest operations (FAO, 2004).

Over the last two decades, international rice prices have followed a market-declining trend. For many small farmers, the plunge in rice prices has been one of the major causes of poverty and hardship and has seriously undermined their household food security, encouraging migration from rural to urban areas. Therefore, rice is central to many government development and food security programs. Given the direct relationship between the rice market and rural livelihoods, many governments intervene and play an active role in domestic rice price stabilization (FAO, 2004).

Most major rice producing countries are also large rice consumers. This implies that the governments of these countries are often confronted with the policy dilemma of keeping prices low for poor consumers, and to keep prices attractive to producers at the same time. This dilemma is another reason for governments to intervene in the sector. Consequently, rice as a crop is one of the most heavily protected agricultural commodities, with the consequence of quite a low level of international trade. This started to change with adjustment programs in the 1980s, and the WTO Agreement on Agriculture in 1994 (FAO, 2004).

2.3 The development of wet rice cultivation

2.3.1 Historical perspective

From now on, we will focus on wet rice cultivation. This section specifically regards utilisation and management of wet rice in Indonesia. Since Java is the most important rice-producing island of Indonesia, it is often mentioned in this part of the thesis. Further on, this is again specified to the area on West-Java where the people of the *Kasepuhan* live.

Both traditional and non-traditional cultivation systems are subject of this thesis. We will also analyse how these systems have an impact on each other⁴. To analyse current traditional wet rice systems in Indonesia, it is relevant to look at some historical

³ See appendix 1 for a table of the top ten rice producing countries.

⁴ The differences between traditional and non-traditional cultivation are described in chapter six.

developments. Where possible, we will make comparisons with the contemporary rice cultivation systems.

According to some archaeologists, rice was already being cultivated even before the Indians came to Indonesia, about 2000 years ago. The first written evidence is the Canggal inscription, written in Sanskrit in 732 AD. It records that there was 'a greater island called Yawa, abundantly supplied with grain and other seeds and rich in gold mines....'. Thus, already at that time, rice fields were large enough to attract the comment of Indian writers (Van Setten van der Meer, 1979:4). According to Ismani (1985:118) reliefs can be found with fertile rice fields on the Borobudur temple on Java, dating from the 9th century. Thus, rice has been cultivated in Indonesia for more than one thousand years.

The earliest known irrigation structure in Indonesia also dates from that era. It is the Harinjing cascade in East Java, mentioned in an inscription, dated 804 AD (Angoedi, 1985). Fourteenth century inscriptions from the Singosari Dynasty in East Java also describe irrigation systems (Pigeaud, 1963).

Ambler suggests that by 1339 AD, gold and iron mining were already of considerable importance on Sumatra and Java. It is assumable that agriculture in general may have been producing a surplus for a non-agricultural population (Ambler, 1988). This implies that already in the 14th century, some parts of Java could produce enough food to feed themselves and sell the surplus. Consequently, rice as a commodity product already existed at that time.

The construction of *sawahs*, dams and irrigation channels in ancient Indonesia are still quite similar compared to the present day situation. Building materials consist of bamboo, trunks of coconut palms and stones. Farmers use baskets of woven bamboo filled with heavy stones to build dams in smaller streams. Larger dams are made of tree trunks, which are laid across the river and the spaces in between are filled with reeds and bushes. From here, the water is directed to the *sawahs* through bamboo pipes or open channels to smaller ones (Van Setten van der Meer, 1979:25).

However, there are also disadvantages of such simple constructions. Especially in the rainy season, they are washed away easily. On the other hand, the materials are inexpensive, easy to get, and the constructions are relatively easy to repair (Van Setten van der Meer, 1979:25).

One of the differences between ancient and temporary irrigation systems is the introduction of concrete by the Dutch in the second half of the 19th century⁵. Of course, concrete is stronger and thus more durable compared to the local materials. Nevertheless, in distant areas it can be difficult for farmers to maintain and repair concrete dams and channels. They do not always have access to the right materials for mixing the different components of concrete, and the availability of the right tools might be problematic. Farmers in remote areas can also have a lack of knowledge in relation to the maintenance of concrete dams and channels. Furthermore, development agencies such as the United Nations, who often sponsor irrigation projects, do not always have structural and long-term maintenance programs after finishing a project⁶.

An indirect implication of more durable concrete dams and channels is that farmers can afford to cooperate in a less intense manner with each other. This might have an impact on the social cohesion within small rural communities.

Nevertheless, both in the centuries before the introduction of concrete as in the contemporary situation, wet rice cultivation encourages farmers to achieve a high degree of mutual cooperation and aid. This applies to farmers who own *sawahs* that lay next to each other, but also between neighbouring villages.

⁵ Consult for example the article of Ravesteijn, 2002

⁶ See for example Lusthaus et al, 1999 and Qualman & Morgan, 1996

Technical ability, organisation skill, special care for the preservation of social peace and the harmonious development of the community have in a period of two or three thousand years formed the special character of the Javanese people. Thus the villages on Java evolved as an autonomous institution, on the one hand in dependence on cooperation with neighbouring villages in the irrigation area, jurisdiction and in some cases on the rulers. On the other hand, Javanese villages evolved also in loyalty to its own autonomy and organisation (Van Akkeren, 1970:5).

Considering the tools that are used for the cultivation of *sawahs*, two of them have survived since Neolithic times, the *pacul* and *ani ani*. The *pacul* is a broad flat hoe with a straight cutting edge, used in the soft wet soil of the *sawah* fields. The *ani ani* has a wide distribution in Southeast Asia and is known under various names. Like the *pacul*, it has a very long history on Java but is now giving way to the *sabit*, the sickle. The *ani ani* has a flad blade of about 5-7 cm, attached to a wooden handle by a wooden pin. The rice, which is cut in the direction in which it bends, is drawn towards the knife-blade and the rice stalks are swiftly severed, several at a time. The reaper proceeds until he has a handful, which is called *agem*. Five *agem*s are bound together to form a sheaf, a *pencar*. Fast workers can cut 10-12 *pencars* per day (Van Setten van der Meer, 1979:34)⁷.

In ancient Indonesia, agricultural techniques, ritual and philosophical prophecy were all closely interwoven and adjusted to a special cosmological pattern of daily life. The Javanese, but also the Balinese, arranged their entire social system in relation to the cosmic classification of the four cardinal directions and the centre. This Hindu-rooted classification they also applied to the organisation of agricultural activities. A vast system of rituals and taboos govern the life of all farmers. They always attempted to control the vengeance of evil spirits who might bring disease and misfortune to their household, animals and crops (Van Setten van der Meer, 1979:58). Although Hinduism and Buddhism came to Indonesia from 800 AD, followed by Islam in the 15th century, many Javanese people in rural areas also believe in a reduced form of animism. Therefore, we can speak of hybrid agricultural technologies, inspired by a combination of religions and beliefs.

2.3.2 Characteristics of wet rice cultivation

The supply and control of water is the key factor in wet-rice growing. However, the regulation of the water on the *sawah* is foremost a matter of delicacy. Both a shortage as an excessive flood can destroy the *paddy*. The quality of water also plays a role, in terms of fertilising substances. Furthermore, the timing is important: planting the *paddy* in a well-soaked field with little standing water is an important condition. Then, the farmer has to increase the depth of the water gradually up to fifteen to thirty centimetres as the plant grows and flowers. Continually, the water has to be gradually drawn off the *sawah* until at harvest the field is dry. Further, the water is not allowed to stagnate suddenly, but if possible kept gently flowing, and periodic drainings are generally advisable for purposes of weeding and fertilising (Geertz, 1963:31).

Irrigation systems for wet rice cultivation can have three independent functions, the watering function, the control function and the fertilisation function (Mohr, 1946:43).

Considering the watering function, we can distinguish two ways of irrigation. Terrace irrigation implies the usage of rainwater that runs off the different levels. Water flows through flumes or conduits from one level to the next. The other method of irrigation within the watering function is the usage of river or stream water. In this case, dams or artificial lakes control the water. From there the water is directed through canals or conduits to the fields that have to be irrigated (Van Setten van der Meer, 1979:21).

⁷ See appendix 7a and 7b for an overview of traditional and non-traditional tools that are used for wet rice cultivation

The control function implies that it is possible to redirect the water in rivers and streams on time in the rainy season. This gives farmers the ability to protect the *paddy* on the *sawahs* from floodwaters. Weak bends in rivers are often strengthened with small dams. Thus, dams have a double function, i.e. a watering function and a control function (Van Setten van der Meer, 1979:21).

Lastly, irrigation also provides the function of fertilisation. Achieving enrichment of the field is of a high importance. This takes place through the transportation of nutrients from rivers or streams (Mohr, 1946:43). Soil fertility of *sawahs* does affect the yield of rice, just as fertilisation does. Nevertheless, this does not appear to exhaust the soil, even over longer periods without fertilisation. On virgin soils, a rapid decline in yield usually takes place within two or three years in case of the absence fertilisation. After ten or twenty years, the yield of *sawahs* tends to remain stable more or less indefinitely (Murphey, 1957).

In short, wet rice cultivation on Java can be characterised as an open and flat field, cultivated with a mono-crop. It is a highly specialised regime, and depends heavy on water-born minerals for nutrition, a reliance on man-made waterworks and a stable equilibrium with regard to the yield (Geertz, 1963:37).

2.3.3 Modernisation and innovation in wet rice cultivation

The methods and techniques used for wet rice cultivation as described in the sections above remained almost unchanged for centuries. This situation changed when the Dutch introduced the development of irrigation as a colonial policy instrument at the end of the 19th century. From the perspective of the Dutch, there were two main reasons to do this. First, irrigation was considered effective in reducing the problems of long periods of drought, causing famine as a result of crop failure in some parts of Central Java at that time. Second, foreign estate companies began to lease land for the cultivation of commodity crops. In order to establish large-scale estate systems, they considered small-scale community systems as not appropriate. At the same time, the progress in hydraulic engineering caused the development of large-scale irrigation systems, particularly at the alluvial plain of the northern coastal zone of Java (Pasandaran, 2004).

As has been mentioned before, wet rice cultivation makes it possible to achieve higher yields compared to swidden rice cultivation. This becomes more important as the population of a country grows significantly. In Western Europe, higher yields could be achieved in the 20th century through continuous mechanization, in order to reduce the amount of labour needed and therefore also the costs of labour (Van der Eng, 2004:2). Mechanization of wet rice cultivation is difficult however, because the wetland-like soil is not suitable for heavy machines. They would simply sink into the mud. Since land is very scarce on Java, the *sawahs* are relatively small. And the smaller a *sawah* is, the less handy is the usage of machines. Consequently, modernisation within wet rice cultivation is generally focused on two aspects; the usage of high-yielding varieties (HYV) in combination with fertilizers (Hazell & Ramasamy, 1991).

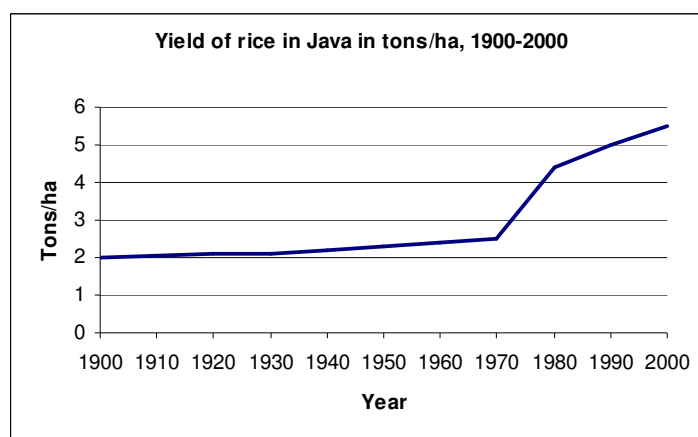


Figure 2.2: increase of rice production per hectare on Java
(Source: Pasandaran, 2004; Vermillion, 1999)

Following independence in 1945, rice production in Indonesia lagged behind the increasing domestic demand. The situation, in combination with the inability to expand production sufficiency, resulted in large-scale importation of grain and a serious drain on the Indonesian economy.

By the 1970s and early 1980s, Indonesia ranked among the world's largest purchasers of rice, with imports peaking at two million tons in 1980. After 1979, the government applied new measures and techniques (FAO and UNDP, 2001).

However, the Green Revolution in Asia already started in the 1960s, with the introduction of high-yielding semi-dwarf rice varieties. Since then, we have seen the introduction of almost 2,000 different rice varieties⁸. Rice harvests in Asia have more than doubled, racing slightly ahead of population growth. The Green Revolution has increased the use of chemicals significantly, and this has an impact on both humans as the environment. From the 1980s onwards, farmers, governments, NGOs and researchers are more aware of this problem. Integrated Pest Management (IPM) programs were used to control the use of pesticides in a more subtle manner. Eventually this led to a Second Green Revolution, which can be characterised by the introduction of new hybrid variances, new rice plant types and the implementation of genomics research (Cantrell & Hettel, 2004). But it was not until 1984 that Indonesia had achieved self-sufficiency in rice. Between then and 1996, the total production of rice in Indonesia was even higher than the total domestic consumption (FAO and UNDP, 2001).

It can be concluded that the combination of larger irrigation systems, together with the introduction of HYVs and fertilizers, made it possible that in the early 1970s farmers could achieve a harvest of two times per year, instead of one harvest a year. The second Green Revolution has contributed to increase the yields even more, because nowadays farmers are able to harvest up to three times per year.

2.4 Social aspects around wet rice cultivation

As mentioned above, especially the organisation around the irrigation of wet rice fields implies the cooperation between individuals and organisations on different levels. In this paragraph, we will explore this in more depth. We will first shortly focus on how farmers organise the work on the *sawahs*. After that, we will review the relevant aspects of the organisation and management of irrigation systems.

2.4.1 Labour and organisation in relation to wet rice cultivation

The work on *sawahs* takes place by manual labour or with buffalos. The most attractive option for a farmer is to use the free labour of his adult children and wife. Although under aged children are obligated to go to school until the age of sixteen, they often help their parents or other older family members on the *sawah*. Generally, children start to assist from the age of twelve. Due to education obligations and lack of strengthness, these children are not able to work full time⁹.

If financially possible, farmers will hire labour during the preparation period. Most of the time the landless neighbours in the same village are asked to help, for a payment between Rp. 10,000 (€ 0.85) and Rp. 15,000 (€ 1,25) per day on average and a free meal¹⁰. Note that the work on the *sawah* and the processing of the *paddy* afterwards is divided between both females and males. As a consequence, the allocation of different tasks

⁸ Consult appendix 8 for local rice varieties and high-yielding rice varieties

⁹ See for more information on the labour division in relation to wet rice cultivation the publications of Husken, 1979; Stoler, 1977

¹⁰ In 2006 exchange rates were Rp 12,000 for € 1,00.

between females and males is often very strict. We will focus on gender aspects in chapter six.

Farmers who cannot afford to pay for labour, often use a certain share of the harvest as a payment. Hardjono describes the labour institutions that exist in many parts of Java. One of the most common is *kedokan*, also known in other parts of West-Java as *ceblokan* and in Central and East Java as *ngepak-ngedok*. Under this system, labourers do not get a wage for hoeing, planting, fertilizing and weeding but at harvest time they receive a larger share of the crop than ordinary harvesters would get (Hardjono, 1993:207). The advantage of such institutions is that it is possible to achieve a desired distribution of labour through planning and cooperation, since farmers in the same area often have the same cropping cycle.

Although Java has a densely population with approximately 140 million people, farmers do have difficulties to find labour. Especially the younger generation regards the work on the fields as having a lower social status. They prefer earning an income in the city, often by the transportation of people with a motorcycle or *ojek*. This situation depends among others on the possibilities for the younger generation to buy a motorcycle and go to the city. In the case of the *Kasepuhan* who live in the mountains, this is certainly not always possible. Moreover, they have only a small income, since their rice production is only for their own consumption and thus not for selling.

Buffalos are by far the most effective labour input during the preparation of the field, if the *sawah* is not too small. The wealthier farmers do have buffalos as capital. They can reduce the costs of labour through the deployment of buffalos and earn some extra money by lending out the animals to other farmers.

Thus, wet rice cultivation is a highly labour intensive activity. Another crucial factor for wet rice growing is irrigation, with which we will continue this chapter.

2.4.2 Community driven irrigation systems

Before the Dutch introduced large-scale irrigation systems in the 19th century, irrigation management was essentially community driven. Therefore, we will first focus on community driven irrigation systems. This will help in clarifying the decision making process that occurred at the tertiary unit of the public irrigation agency.

Community driven irrigation systems can exist in two patterns. The village community irrigation system is dominantly located in hilly areas and partly in the coastal alluvial plain of Java. In this pattern, irrigation management is an integral part of the village administration. The management flexibility is consistently depending on the water level in the canal. When the water supply is more than adequate, the management happens in a very decentralised practice. However, if the water supply is relatively scarce, a centralised system at the level of the village administration is formed (Pasandaran, 2004:83).

The second pattern is an autonomous community driven irrigation system. These systems are often not only a way of organising irrigation, but also a democratic agricultural planning unit¹¹. People who use such a system, view the importance of ritual technology within the context of harmonious relationships between themselves, natural resources and God¹². Other characteristics include a water control system, which is open to society and proportional division of water at each bifurcation point. This division of water itself is the reflection of the desired justice and democracy (Pasandaran, 2004:83).

The difference between both systems lies in the fact that the first one only deals with irrigation water. It functions simple but effectively; the less water, the more hierarchy is needed in the system. The second system is a holistic one that has a higher goal than only the equal allocation of irrigation water. It deals with the continuous balance of everything with everything, as an integral part of the life of the rural community.

¹¹ See also Geertz (1980), on the Balinese *subak* systems.

¹² Consult section 3.3.1 for more information on cosmology

Both community irrigation systems were organised on a relatively small scale. The large-scale public irrigation systems that were introduced by the Dutch were often created on the same place where community based irrigation systems existed. Therefore, we will concentrate on these public systems below.

2.4.3 *The development of public irrigation systems*

Introducing the colonial public irrigation system in the early 20th century, the Dutch essentially focused on two issues. Firstly to increase the production per hectare, and secondly to increase the national rice production as such. Below, we will review this in more detail. The creation of the first Dutch irrigation systems dates much earlier however. According to Pelzer, the construction of the first system took place in Buitenzorg (now Bogor) in the period of Governor General van Imhoff (1743-1750). He also writes that until the early 20th century, these endeavours were of extremely limited proportions. Most of the 1.27 million hectares that were irrigated in the 18th century were either under village irrigation systems or merely rainfed (Pelzer, 1945).

The reasons for the Dutch to start large-scale public irrigation systems were foremost important to increase trade. Under the liberal oriented economic policy – adopted after 1870 – foreign estate companies began leasing land for cultivation of exports crops (such as sugar, indigo and tobacco), including some that required guaranteed supplies of water. The small-scale village based irrigation as described above, were simply not appropriate for large-scale cultivation due to their technical inadequacies (Booth, 1977a). The new policy of the Dutch was also a ‘modernisation mission’, in which modern technology played a central role. Improving people’s welfare was thus a second aim of this policy (Ravesteijn, 2002:134). Indeed, in the course of time irrigation became one of the key factors of the modernisation mission of the Dutch.

During the first half of the 19th century, Dutch engineers started constructing irrigation works by creating dams in rivers that already had a connection to irrigation works. Often these works replaced the small-scale communal irrigation systems (see the section above) or those constructed by the local colonial administrators, with the help of forced labour. The works constructed by the colonial authorities, though larger than the traditional structures, were just as vulnerable and so continuous renovation and reconstruction was necessary. We can explain this by the fact that engineers used the same materials as rural communities. Gradually they introduced more durable materials such as brick and concrete (Ravesteijn, 2002:131). Just as rural communities gained experience by trial and error many centuries ago (see also section 2.3.1), the Dutch engineers faced exactly the same problems, but on a larger scale. Consequently, the possibility of using new materials and technologies made the difference for the creation of large-scale irrigation systems.

In the period between 1800 and 1885, modern irrigation works remained relatively scarce. Considering the quality of these works there were improvements because of the utilisation of new materials. Steadily construction activities increased and in 1890, they gained a definite form with the introduction of the General Irrigation Plan for Java. The plan covered nineteen projects and another seven projects were added to the plan later (Ravesteijn, 2002:133). This makes clear that the creation of large irrigation systems not only implies access to durable materials and technologies, but also a functioning institutional system that facilitates the practical implementation. We will explore this in more depth below.

To mark out the most suitable way of irrigation management, the colonial government established a commission in 1904. There were two proposed options based on the practices that took place in the field. The first option was based on the predetermined yearly cultural plan, which consisted of two major components, namely the cropping system and the water distribution plan. The cropping system plan refers to the arrangement of the crops within an

irrigation system in a given year or in a given planting season. The water distribution plan refers to the allocation and scheduling of water supply to meet crops demand for water of a given cropping system plan. The second option was the recognition of the principle used in community driven irrigation systems, namely proportional water allocation to all the blocks of rice fields as a consequence of the principle of equality of opportunity (De Gruyter, 1933; Graadt van Roggen, 1935).

The colonial government determined that the first principle had to be implemented in a public irrigation system. Various rules were set up in relation to this method of irrigation management. The authorities also constructed a *golongan sistem* for the sequencing of irrigation water delivery to various sections of an irrigation system. This was particularly important during the beginning of the rainy season when there was not enough irrigation water for all sections. Another significant rule called *pasten* was related to water allocation among various crops. It consisted of criteria on relative irrigation requirements of the crops, and how to apply these criteria during the crop season (Pasandaran, 1976). Officials registered all rules in the *Algemeen Water Reglement* or General Water Law in 1936. The provincial water regulation specified further details because of decentralisation of public services (Pasandaran, 2004:84).

It is clear that the introduction of public irrigation systems made it possible to cultivate rice on larger scales than before. Nevertheless, Witzenburg stated that in the mid 1930s the average performance of community based irrigation systems was higher than the public systems (Van Witzenburg, 1936).

Moreover, several controversial issues arose out of the creation of public irrigation systems on Java. On village level, an institution called *ulu-ulu* normally manages irrigation. The Dutch considered this institution as not compatible with the management at the main system level, because it did not fit into the hierarchy of the organisation. Their solution was the establishment of a so-called distributor *ulu-ulu*, where water is managed at the tertiary level instead of the management on village level. This effort was not widely accepted simply the village administration did not support it (Pasandaran, 2004).

Another controversial issue that existed with the introduction of the large-scale development of public irrigation systems was the supposed effect on improving the welfare of society. The Dutch claimed that the new public irrigation systems would assist in providing enough food for the Javanese. Through huge investments by the Dutch colonial government, the technical irrigated fields increased from 200,000 ha in 1910 to almost one million hectares in 1930 (Van der Eng, 1996:24). Despite these investments, the relative productivity of irrigated areas remained almost at a constant level in the same period, slightly more than 2 tons/ha (Booth, 1977b). At the same time, the population of Java increased from 20 million to 42 million. Nevertheless, the advantage of the public irrigation systems became clear several decades later during the Green Revolution.

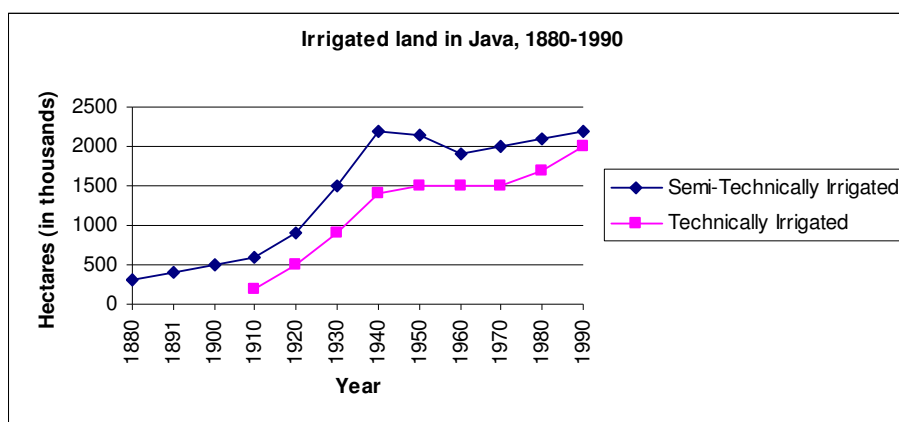


Figure 2.3: increase of irrigated fields in Java (source: Van der Eng, 1996)

The advanced technology of the systems showed to be a good combination with the usage of HYVs and fertilisers (Pasandaran, 2004).

It is clear now that the colonial government more or less forced large irrigation systems upon the rural communities. Nevertheless, as Ravesteijn (2002:127) states, the Dutch also laid the foundations for the present irrigation network.

In the 1970s, the government of Indonesia decided to achieve self-sufficiency in rice production through a comprehensive top-down policy. Again, large investments were made to rehabilitate the existing irrigation systems and to develop new irrigated areas in the remote areas of Java. Rehabilitation took place of both the community systems and public irrigation systems. The consequence of this policy became clear too; it weakened the operation and maintenance of many irrigation systems considering the participation of local communities. In 1999, the government of Indonesia decided to reform the management of irrigation systems by improving a legal framework to enable the local communities to share a greater responsibility in the management of public irrigation systems. However, more than fifteen years later the roles of both local communities and the government itself in the process of both land and irrigation management is still not clearly defined (Pasandaran, 2004).

With the description of community based irrigation systems and the public irrigation systems, we can understand some of the contemporary frictions that Indonesia faces within wet rice cultivation. Community based irrigation systems are of a smaller scale compared to public irrigation systems. Apart from that, the management of the community systems is often organised in a different way. Changing community systems into public systems implies considerable adaptations that might be practically hard to implement for farmers.

As Ravesteijn (2002:139) states, the main problem in contemporary irrigation in Indonesia is the relationship between the government's irrigation service activities and local farming. Striking the right balance between state and the locality, modern technology and wet rice cultivation and between engineers and farmers is the main challenge facing the present society, just as it was the main challenge in colonial and pre-colonial times.

A combination of both systems might still be preferable however. Public irrigation systems are large enough to produce sufficient rice to feed all Indonesians. At the same time, these systems can only exist in combination with the acceptance of local communities. After all, they are the ones who cultivate the fields, and thus have the practical knowledge of how to produce rice. We can conclude that the most desirable situation is to combine the experience of rural communities gathered throughout the centuries, together with modern technologies and a decentralised agricultural policy in order to meet the rice demands in Indonesia of today.

2.5 Conclusion

In this chapter, we have analysed wet rice cultivation in Indonesia. This nation is the world's third largest producer of rice. The rice production in tons per hectare has increased significantly over the last century. One hundred years ago, this was around 2 tons/ha, today it is possible to produce almost 6 tons/ha. Moreover, the total amount of (semi-) technically irrigated land has increased from 800,000 hectares in 1910 to 4,5 million hectares in 2000.

People on Java and Bali have been practising wet rice cultivation already one thousand years ago. Over the centuries, they have been developing simple community based irrigation systems by trial and error. Dams and channels were all relatively simple, and made from local materials.

We can explain the increase in production – starting around 1900 – by a combination of historical developments. Due to trade interests, the colonial government decided to develop large-scale irrigation systems. In relation to wet rice cultivation, the main purpose was to increase the production per hectare, the total area of irrigated land and consequently

the total national production of rice. Therefore, the colonial government started to replace community based irrigation systems by new, large-scale irrigation systems. Nevertheless, the first goal was never achieved, until the Green Revolution started in the late 1960s and the beginning of the 1970s. The introduction of new high-yielding rice varieties in combination with fertilisers was a fact. New technologies in combination with the dated public irrigation systems of the Dutch truly made a difference in increasing rice production. Because of the poor condition of a number of systems, the Indonesian government started to invest in new public irrigation systems in the 1970s, with the assistance of the Worldbank and other international investors. During 1980s, the Second Green Revolution provided new hybrid varieties, new rice plant types and the implementation of genomics research.

These three developments together made it possible for Indonesia to achieve self-sufficiency in rice production in 1984. Between then and 1996, the total production of rice in Indonesia was even higher than the total domestic consumption. Since then, Indonesia has largely secured its national rice production and thus the most important part of the daily menu for the people of Indonesia.

The general developments within the Indonesian wet rice cultivation have been analysed in this chapter. This provides a first basis for understanding the reasons for the differences that do exist in wet rice cultivation considering methods, techniques and management. Indeed, there are many exceptions in relation to the developments within wet rice cultivation. Moreover, between traditional systems on the one hand and modern systems on the other, there is a wide range of different stages of development. So how can we explain these differences? For this, we need to extend the basis of this chapter with an analysis of rural communities and their customs, habits and behaviour in relation to wet rice cultivation. Therefore, the next chapter will deal with a number of theoretical concepts that can assist in understanding customs, habits and behaviour of rural communities in Indonesia.

Chapter three

Conceptual framework

3.1 Introduction

In many areas of Indonesia, farmers have followed modernisation trends within wet rice cultivation. Yet in other areas, farmers still follow traditional methods and techniques for the utilisation of *sawahs*. Two hypotheses might explain these differences. Firstly, it is possible that some rural communities do not want to modernise their wet rice system because there is a direct relation between rice production and their identity. Secondly, the form of traditional authority of a rural community might make the integration of modernisation influences less accessible. On the other hand, there are also influences from outside that promote modernisation, such as the agricultural programs of the Indonesian government of the last three decades. However, we will not include this in the thesis¹³.

This chapter consists of the following paragraphs. First, we will concentrate on the meaning of identity, tradition and *adat* in wet rice cultivation. After that, we are going to review the symbolic aspects within wet rice cultivation. It will become clear that for traditional rural communities in Indonesia, rice can mean much more than only a form of nutrition. The next paragraph focuses on traditional authority and the way in which the members of a traditional community accept this authority. The chapter ends with several important conclusions.

3.2 The meaning of identity, tradition and *adat* in wet rice cultivation

3.2.1 Identifying the concept of identity

In many rural areas of Java, wet rice cultivation is of crucial importance for sustaining a living. In some of these rural areas wet rice cultivation is not only important as a main part of the daily menu, but also as an integrated part of the live of the people. Thus, for some social groups on rural Java, wet rice cultivation is also part of their identity. The *Kasepuhan* are a very clear example of how rice can be a leading central theme for a traditional rural community. In this sense, they are not unique since many other traditional communities can be found across Java that also regard rice as a highly important aspect of their existence, other than a form of nutrition. Therefore, we will now concentrate on the concept of identity, and relate it with wet rice cultivation.

Identity is foremost a symbolic construction that exists by attributing a meaning to the characteristics of customs, habits and behaviour of a certain social group in such a way that this social group can be distinguished from other social groups. Identity has to do with characterization and distinction. The customs, habits and behaviour of a social group have to be eligible and recognizable, with the possibility of connecting them to characteristics and appreciation. To these characteristics, a specific and unique story is connected and symbols or icons do often play an important role. Thus, identity is the basis for a social group for being recognizable. Identity provides boundaries and makes communication and exchange possible (RLG, 1999).

Consequently, we will define identity as:

‘a symbolic construction of a coherent totality of specific characteristics of a social group, making this group distinguishable and recognizable from other social groups and attributing a meaning to the customs, habits and behaviour of this social group’ (RLG, 1999)

¹³ See appendix 11 for a summary of the report. Consult Bolman, 2006 for the full internship report.

For a number of traditional rural communities on Java, wet rice cultivation is the core of their identity. Quite frequently, members of those communities do have a holistic view of the world, or in other words, everything relates with everything. We can link numerous aspects of their lives directly or indirectly to the cultivation of rice. To be more concrete, many of these communities have made special huts for the storage of harvested rice. Ceremonies and rituals are organised on a frequent basis with different purposes, such as the prayers for the rice goddess of *Dewi Sri*. These are only a few examples of many more customs, habits and behaviour that are all part of the identity of such communities.



Figure 3.1: huts for the storage of rice, in the area of the *Kasepuhan*, West-Java

3.2.2 Specifying identity with the concept of tradition

Communities that regard rice cultivation as an integrated part of their existence often follow a traditional way of life. Consequently, the question arises what 'tradition' is, and how to distinguish it from 'identity'.

The definition below is a construction from conversations with members of the *Kasepuhan* community combined with the general experience in the field. We will place the concept into a broad context, implying that it is applicable to different aspects of the life of the *Kasepuhan*, for example the construction of houses and huts, but also wet rice cultivation. Moreover, this broad context also means that the concept has to be applicable to social groups in modern societies. Indeed, tradition is not only applicable on 'primitive' or less developed societies.

Tradition is knowledge put into practice. It passed down from generation to generation in a written or vocal form or in habits. It concerns both material as non-material issues, which are often inextricably connected to each other. Tradition is limited to a specific social group of people in a specific geographical area. Passing down the material and non-material issues relates with specific values and norms that are significant for this specific social group. The knowledge put into practice is of such significance that this social group is intentionally or non-intentionally maintaining it. The purpose of maintaining is to guarantee the practical survival of this knowledge, the survival of the identity and the way of life in general.

The fact that tradition is limited to a specific social group and a specific geographical area does not mean that tradition is isolated per se. Other processes can intentionally or unintentionally influence it. Nor does 'the survival of knowledge' mean that tradition is static, on the contrary, it is often dynamic, and also in Indonesia. It is a developing country that is modernising in many ways; tradition is being reshaped into different forms, so that it can be combined with new influences of modernity. In this sense, the dynamic characteristic of tradition is a key explanation for its survival in a new shape¹⁴.

In short, I would like to define the concept of tradition as:

'Customs, habits and behaviour of a specific social group that have been passed down from generation to generation, for the survival of the same customs, habits and behaviour, and the survival of the identity of this social group in general'

We will now work out the concept of tradition by reviewing some relevant literature.

¹⁴ See for example Hobsbaum (1983) for more information on the concept of tradition

Handler and Linnekin argue that we should view the concept of tradition as a symbolic construction. They claim that it is not possible to define tradition in terms of boundedness, givenness or essence. Thus, the concept refers to an interpretive process that embodies both continuity and discontinuity (Handler and Linnekin, 1984:273). Smith also argues that 'traditional' and 'modern' are interpretive rather than descriptive terms, while all cultures are changing continuously. There can only be what is new, although what is new can take on symbolic value as 'traditional' (Smith, 1982 in Handler & Linnekin, 1984:273). Handler & Linnekin also warn scientists to be careful with analysing the concept of tradition without detaching it from the implications of Western common sense, which presumes that an unchanging core of ideas and customs is always handed down from the past (Handler & Linnekin, 1984:286).

The way in which Handler and Linnekin analyse the concept of tradition makes one aware of the fact that tradition is often a perception or an interpretation. Thus, one has to acknowledge that a specific social group has a certain perception of its own traditions. Outsiders – e.g. researchers – who visit this social group, also construct their own perception of the traditions of this social group.

3.2.3 Specifying tradition with the concept of *adat*

As has been mentioned before, most traditional rural communities on Java that cultivate wet rice do have a holistic view of themselves and the world in which they live. We will explore this in more depth by analysing the concept of *adat*.

The word *adat* comes from the Arabic word *ada* and means custom (Wessing, 1977:295). More than one hundred years ago, the Dutch law scientist Van Vollenhoven 'discovered' *adat* and called it *Adatrecht*¹⁵ (Dutch for *adat* law). He described the concept very extensively, and connected it to traditional legal matters (Hoadley, 2004:15). However, *adat* means more than traditional behavioural forms that may have legal implications. The concept also refers to a set of rules, keeping life on earth in harmony with the cosmic design (Wessing, 1977:295). The Sundanese people of West-Java for instance, see all elements of the cosmos, whether material or non-*material* as an integrated aspect of power¹⁶.

This power is described by Anderson as 'concrete, homogenous, constant in total quantity and without inherent moral implications as such' (Anderson, 1972 in Wessing, 1977:295). Therefore, we can view the cosmos as a container of this power since the cosmos is the totality of all the material and non-material elements and entities in existence. Since these elements integrate with cosmic power to varying degrees, the totality of the cosmic contained in these elements is the totality of the power in the cosmos (Wessing, 1977:295).

Hidding has pointed out that life in West-Java is a participation in cosmic order in which *adat*, which includes all the customs, rituals obligations and *bujuts* (taboos), is a guide to proper behaviour. Therefore, the first responsibility of an individual is to know *adat* and live by it (Hidding, 1948 in Wessing, 1977:295).

According to traditional rural communities in West-Java, the ancestors have laid down the rules of *adat*. We can regard these rules as instrumental in maintaining the cosmic balance and thus the order of life. Thus, *adat* is a set of sacred rules, which are the heritage of the accumulated knowledge of the ancestors of preceding generations of a social group. This does not imply that each individual knows the totality of this knowledge; nevertheless, the community maintains it as the collective knowledge of its members (Wessing, 1977:296). Indeed, as we have been pointing out above in the part on tradition, maintaining knowledge that is put into practice occurs intentionally or non-intentionally.

¹⁵ For a full review on the work of Van Vollenhoven, consult the book by Holleman (1981).

¹⁶ See also section 3.3.1 on cosmology

Concluding, we will define *adat* as:

‘a set of sacred rules which are to be maintained’ (Wessing, 1977:296)

3.2.4 Integrating the concepts of identity, tradition and *adat*

For traditional rural communities on Java that have wet rice cultivation as the main source of their existence, the three concepts of identity, tradition and *adat* do play a crucial role. Moreover, they are interrelated with each other. *Adat*, the combination of sacred rules, cannot exist without tradition. At the same tradition cannot exist without identity.

To explain that separating the three concepts is not possible, we will shortly describe the ceremony carried out just before a *sawah* is being cultivated with the seed. Indeed, identity, tradition and *adat*, all come together in this small and private ceremony. The ceremony is an analysis from a custom of the *Kasepuhan* from West-Java.

The *Kasepuhan* call this small ceremony before the women go sowing on the field *tebar*. The main reason for this is to get the blessings of rice goddess *Dewi Sri*. Farmers reserve a



small part of the *sawah* for this, until the moment of harvesting. First, the family that owns the *sawah* prays to *Dewi Sri*. Then, they burn some incense in a little tray of straw, standing on a stick. The head of family then lays a first rice branch, pointing to the south. This is because the *Kasepuhan* believe that there is a relation between the wind direction of the south and the female. The next rice branch is pointing to the north, which stand for the male. According to the *Kasepuhan*, the husband is responsible for the income of the family; the wife is responsible for fertility and taking care of the family. Only a combination of the two can be successful. The third and a fourth rice branch are pointing to the east and west. This stands for the direction where the sun rises and sets. In the middle, where the incense stands, the female, the male, and the sun are coming together. The incense stands in the new rice field, the water, and the fertile soil.

Figure 3.2: a *Kasepuhan* member carries out a traditional custom called ‘*tebar*’

In short, for the *Kasepuhan*, everything comes together during the ceremony of *tebar*. It is the most important symbolic construction, connected to their vision of the universe. This is their way of life, their identity, a key ritual of their traditions, and one of the rules of *adat*. In the next paragraph, we will focus in more detail on these symbolic aspects.

3.3 Symbolic aspects within wet rice cultivation

3.3.1 Explaining the holistic view with cosmology

The analysis of the meaning of cosmology to rural communities in Indonesia is somewhat problematic. A researcher from a modern country should be highly rationalistic in his or her way of reasoning: as science demands, the researcher has to prove and explain the existence of phenomena. If the opposite is the case – proving and explaining a phenomenon appears to be impossible – the conclusion in scientific research is that it does not exist. As Aragon states, many anthropologists reject others’ cosmological ideas as empirically impossible, yet accept them as symbolically or culturally ‘true’ for the native (Aragon, 2003:132). Thus, what might be rational for rural communities might be irrational to a

researcher, and vice versa. For this thesis, it is not relevant to discuss whether for example spiritual phenomena are true or not. What is relevant is the meaning and impact of cosmology for rural communities in Indonesia as part of a possible explanation for the fact that these communities do not always follow modernisation trends in wet rice cultivation¹⁷.

For many rural communities in Indonesia, life exists from not only human beings, animals and the cultivated and natural surrounding. In South-East Asia in general, and in West-Java more specifically, people of rural societies often have a holistic view of the visible and invisible world. As has been mentioned above in the section on *adat*, they believe that everything relates with everything.

The *Baduj* of West-Java are one of the examples of traditional rural communities for which balance between all aspects in the universe is the central theme in every day life. Wessing has written several articles about the *Baduj* and their vision of the universe. He states that the *Baduj* – being part of the ethnic group of the Sundanese – and the Javanese in general see all elements of the cosmos, whether concrete or abstract, as imbued with power” (Wessing, 1977:295). Alternatively, as Aragon explains, Javanese and other Indonesian ‘animistic’ cosmologies do not divide the world into ‘natural’ and ‘supernatural’ spheres of power, following different rules or derived from different origins. To illustrate this, he points to the Indonesian word for knowledge, *ilmu*, borrowed from Arabic, which refers equally to technology or science *and* to mystical religious or magical knowledge (Aragon, 2003:137).

In most articles on cosmology mentioning animism, both concepts are inextricable because of their connection with each other. Tylor (1913) describes religions in which ‘natural beings possess their own spiritual principles and humans establish with these entities personal relations of a certain kind – relations of protection, seduction, hostility, alliance, or exchange of services’ (Descola, 1992:114). In other words, animism is the belief in the personification of the physical world¹⁸.

Thus, we should not regard people from rural communities in West-Java but also on other islands of Indonesia as an independent agent, but rather as a functioning part of a larger whole. Through the process of enculturation, the person is socialised into this larger whole and learns to deal with the various entities and influences with which he or she is confronted (Hidding, 1948 in Wessing, 1977:296).

Similar to the *Baduj*, the *Kasepuhan* of West-Java also follow a traditional way of life and their view of the universe is more or less the same. Adimihardja calls this view cosmovision, arguing that for the *Kasepuhan*, the universe will continue to exist as long as its laws of regularity and equilibrium, controlled by its cosmic centre, can keep the universe’s elements in balance. This belief influences all aspects of the lives of the *Kasepuhan*. The agricultural system practiced by the *Kasepuhan* is rooted in their cosmology and their ancestor’s beliefs, called *tatali paranti karuhun*, “the ancestors’ way of life.” The *Kasepuhan* believe that in the universe physical elements and social systems are intimately connected (Adimihardja, 1998).

In the next section, we will focus on myths and rituals that are common in rural communities in Indonesia. Myths and rituals do often have a direct connection with cosmology. Gibson explains this connection. He writes that the origin of many myths center on the conflict between a male principle associated with the sun or sky or Upperworld and a female principle associated with the moon, water or Underworld. The female principle is an aspect of the male principle from which it is yet repelled. The male principle must forcibly overcome the antagonism of the female principle to produce new life, at which point the principles are able to live in harmony as a couple. The resolution of the conflict between the two principles

¹⁷ See for example Adimihardja, 1998; Gibson, 2005; Ismani, 1985; Laksono, 1990; Wessing, 1977

¹⁸ Consult section 3.3.2 for animism in relation to myths

leads to pregnancy and to the birth of new life, which is also a form of unity-in-duality, in this case that of opposite sex twins (Gibson, 2005:47).

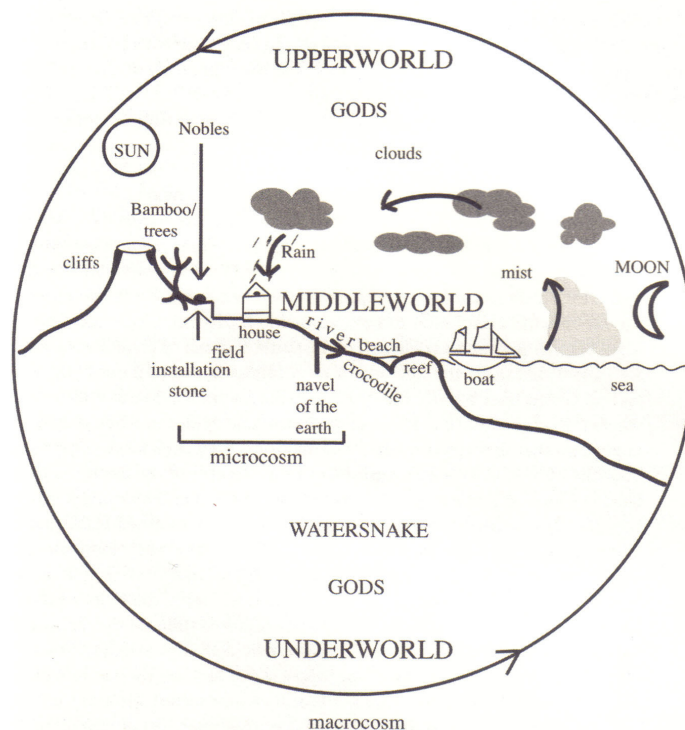


Figure 3.3: a cosmological view of rural communities in Indonesia (source: Gibson, 2005:51)

So how important is balance and harmony for the lives of, for example the *Baduj* or the *Kasepuhan*? As Adimihardja writes, the *Kasepuhan* believe that disturbing the regularity of various physical or non-physical components, which are alive in the universe, can cause disaster for human life (Adimihardja, 1998). In case of the *Baduj*, this is also applicable. Yet influences of modernisation do have an impact on both the *Kasepuhan* as the 'outer-Baduj'¹⁹. One example is the fact that the 'outer-Baduj' are walking on shoes in contrast to the 'inner-Baduj'. Another example is a small number of members of the *Kasepuhan* community who now have a radio, television, or even a motorcycle. On the other hand, several aspects of the life of the *Kasepuhan* have almost not changed, such as traditional wet rice cultivation, the traditional huts for the storage of rice, and the way of cooking rice by women. Apparently, certain customs are of such a crucial importance that they are not to be changed.

3.3.2 Myths and rituals

In this section, we are going deal with the concepts of myths and rituals, using a general theoretical analysis. The discussion in anthropology whether separating myth and ritual is conceivable or not, has been lasting for more than a century. Over the last decades, most

¹⁹ The 'outer-Baduj' are influenced by modernisation trends, in contrast to the 'inner-Baduj' who still follow a pure, traditional way of life.

anthropologists agree that it is not possible to separate them, since are inextricable and interrelated. A short analysis of the classical views on myth on one hand and ritual on the other is useful. After the general theoretical part, we will specify myths and rituals to wet rice cultivation in Indonesia. To illustrate how rural communities in Indonesia are giving form to myths and rituals, we will describe some important practical examples below.

Theoretical orientation

The word myth comes from the Greek word *muthos*, which means spoken word or story. Primordially, in religious-historical sense, a myth is a story about acts of gods, half-gods or divine ancestors, committed in the 'mythical' primeval times. It created and ordered the world, and therefore culture originates in it (Winkler Prins, 2002). Since the 19th century, quite some anthropologists have written about the concept of myths. We should analyse the concept carefully, since the myth itself is – at least to a certain extent – an interpretation of the teller, and at the same time, the researcher interprets it. This makes clear why there are different explanations of why myths do exist and what their function is.

According to the 19th century anthropologist Tylor, myths are pre-scientific attempts to describe the existence of human beings, animals and celestial bodies. The primitive human being, according to Taylor, is intellectually curious, as eager to explain the world as modern human beings. In order to explain two particular observations, the primitive first postulates human souls and then ascribes souls to all of nature. Eventually, he personifies the souls, which thereby become spirits or gods, inhabiting all natural phenomena. Finally, he invents myths to explain their actions. The result is animism, the belief in the personification of the physical world (Tylor, 1913). This point of view however, does not regard the emotional character of many myths. Moreover, it is not very assumable that 'primitive human beings' are intellectual per se.

Durkheim viewed myths as descriptions of a certain society in symbolic metaphysic terms. He states that myth arises following ritual in order to explain it: "In principal the cult (or ritual) is derived from the beliefs, yet it reacts upon them: the myth is frequently modelled after the rite in order to account for it, especially when its sense is no longer apparent" (Durkheim, 1965:419-220). This implies that according to Durkheim, the myth is often but not always modelled after the rite. Thus, according to his theory, myth and ritual can exist apart from each other. Because the Sundanese people of West-Java and many other ethnic groups in Indonesia have a holistic view of the material and immaterial world, Durkheim's theory is less suitable for our analysis.

In contrast with Durkheim, Douglas focuses primarily on the meaning of myth and ritual, not the effect. Consequently, she regards the two concepts of myth and ritual as inextricably connected to each other. Douglas acknowledges that myth and rituals have an effect, because it organises an individual's life and, when practised in common, organises a society. But their meaning, the outlook that they express, is primarily of her interest (Douglas, 1966:63-64). Thus, she regards myth and ritual as an expression of a worldview of a social group that maintains and reinforces their identity and traditions. As Segal writes on Douglas view, ritual and myth exist to make a statement about human experience, not to make human beings feel better or act better (Segal, 1980:182).

We will also follow Douglas' view of integrating the analysis of myth with ritual in this thesis. The main reason for this is that the worldview of many rural communities in Indonesia also integrates myths and rituals, as part of their holistic way of life. This does not mean however, that both concepts are synonym to each other.

We will now focus specifically on rituals, explaining the concept as a collective activity, consisting of a ceremony in which members of a social group participate. The goal of the ceremony is to intentionally or non-intentionally maintain and reinforce solidarity and identity of this social group, and to confirm the collective norms and values. Consequently, rituals encourage the social integration within the social group and the continuity of the life of this group (Winkler Prins, 2002). This implies that rituals can have many different forms, and

take place in both modern and less developed societies. Moreover, the motivation to carry out a ritual is very diverse. These motivations can be of a political or religious nature on a large scale, for example on national and even on international level. However, the execution of rituals also takes place on micro level, in a household due to birth, marriage or death, or on village level due to an agricultural harvest period.

Durkheim makes several relevant comments, although somewhat reductionistic. In his analysis of Australian aborigine rituals, he argued that the most fundamental material symbol is the human body itself: it is both the primary datum of subjective experience and the most important datum of objective observation. Coordinated bodily sounds and gestures in obligatory, collective and recurrent rituals are creating collective sentiments and the notion of the sacred. The sentiments generated in rituals then have to attach themselves to durable symbolic objects to form a continuing source of solidarity (Durkheim, 1915/1995). In other words, the human body as a fundamental material symbol is the essential factor in rituals. Nevertheless, as has been made clear above, for many Indonesian rural communities *immaterial* symbols are of a high significance too. According to the ethnic group of the Sundanese in West-Java, the influence of the ancestors, Gods and Goddesses on their lives is certainly not to be underestimated. In traditional wet rice cultivation in Indonesia these immaterial symbols can be crucial for making decisions on the timing of sowing and harvesting on *sawahs*. Consequently, it is not possible to separate the human body as a material symbol from immaterial symbols.

Durkheim's view on rituals becomes relevant when we connect it to the concept of identity. Through body language and bodily sounds, in combination with symbolic objects such as clothing, musical instruments and artefacts, solidarity and identity of a social group are visibly maintained and reinforced.

The question arises, what the differences and similarities are between myth and ritual. Both myths and ritual assist in the maintenance and reinforcement of the identity of a social group, but this happens in a vocal or written way. Of course, myths assist in the form and shape of rituals too. As Gibson points out, mythical knowledge expresses much of the same symbolic logic found in ritual, but in a more explicit, verbal form. It is thus easier to communicate from one locality to another (Gibson, 2005:28). Considering the communicative aspects, he also mentions Lévi-Strauss. Myths can pass from one community to another, undergoing systematic transformations as they engage with different local details of natural environment, productive techniques, and social organisation. The distribution of mythical knowledge can spread across regions.

However, because individuals tell and retell a myth and relate it to their immediate experience, it is in a state of constant transformation through time (Levi-Strauss, 1971/1981:629; Gibson, 2005:29). Myths make explicit and play around with cognitive elements implicit in ritual, but they do not exhaust their meanings. Conversely, rituals pick out certain aspects of myths for periodic re-enactment, but they cannot exhaust their signifying potential. Nevertheless, a set of myths does not explain a set of rituals; it only deepens and complicates their analysis (Gibson, 2005:28-30).

In rural communities in Indonesia that practice traditional wet rice cultivation, it is likely that myths and rituals are part of every day life in quite an intensive manner, compared to those who practice non-traditional wet rice cultivation. The reason for this is that according to *adat*, rice farmers of a traditional community are obligated to follow the traditional rules of the ancestors. Members of a traditional community believe that if they do not follow these rules, the cosmic harmony is disturbed, causing disaster for the whole community. Consequently, looking at myths and rituals can assist in understanding why not all rural communities follow modernisation trends in wet rice cultivation. We will look at the practical aspects of myths and rituals below.

Myths in relation to wet rice cultivation

We can classify three main themes considering rice myths. In the most common theme, rice – and other cultivated plants – are said to have sprouted from the dead body of a female ancestor or goddess. In the second theme, rice is a gift from either heaven or the underworld. In the third, human beings steal the coveted food plant (Van der Weijden, 1981:212-213). In this section, we will concentrate on the first theme. Indeed, myths on *Dewi Sri*, the goddess of rice, are by far the most important referring to rice cultivation in Indonesia. We will use the name *Dewi Sri*²⁰, although the full name is *Dewi Sri Sedono*. There are also other names such as *Nyi Sri* in the Sunda language, and on Java the name Mbok Sri Ayu is also used, meaning beautiful rice goddess. Note that there are many different versions of this myth, about twenty-two written versions, and many verbal versions (Adimihardja, 1998; Greve, 2005:10; Ismani, 1985:120).

Although there are quite some differences between these myths on *Dewi Sri*, four aspects are always present. Firstly, the goddess comes from heaven to earth, often together with her brother and sisters. Secondly, she bestows food and happiness to the people. Third, she is the ultimate symbol of rice and fourth she is the symbol of relief and assistance to the people (Greve, 2005:22). In short, *Dewi Sri* represents the primeval waters and the Underworld, which is auspicious for the fertility of the earth and the good fortune of the human community (Ras, 1973:439 in Gibson, 2005:62). Below, the Javanese and more specifically the Sundanese version is described²¹.

Dewi Sri was born from an egg belonging to *Dewa* or god *Anta*, the holder of power on earth. He presented the egg to *Dewa Batara Guru* who lives in heaven. His role is to teach and guide people in order to live within the boundaries of the traditional customs. *Dewi Uma* cared for *Dewi Sri* during her childhood until she was grown up. On the order of *Dewa Sanghyang Wenang*, who holds the power in the universe, *Dewi Sri* was killed after eating the kuldi apple from the Garden of Eden. The reason for this was that *Dewa Sanghyang Wenang* suspected that *Dewa Batara Guru* had fallen in love with *Dewi Sri*, his adopted daughter. *Ki Bagawan Sakti*, a respective man, who has supernatural power, and lives on the earth as the assistant of *Dewa Batara Guru*, buried the corpse. A week later, plants and some other trees began to grow on the cemetery of *Dewi Sri*. From her head grew several varieties of coconut trees. From her eyes grew several varieties of rice. From her midriff grew several varieties of rice. From her legs grew several varieties of bamboos. From her tendons grew several varieties of spreading plants. From her hair grew several varieties of grasses, and from her vagina grew arrengea trees. *Dewa Batara Guru* presented all these plants to *Prabu Siliwangi*, a wise king of the Padjadjaran Kingdom, so that *Prabu Siliwangi* could plant and cultivate them throughout Java.

We can now understand better, how traditional communities explain the existence of the natural world. We are also able to explain why rice is not simply a way of filling a stomach for these communities.

According to traditional Sundanese beliefs, all the plants growing throughout the world originated from the cemetery of *Dewi Sri*. Thus, the cemetery of *Dewi Sri* is believed to be the "centre" for the first varieties of plants available to support human lives. The cemetery, according to tradition, is the "centre" of the macro and micro cosmos (Adimihardja, 1998). We can conclude that according to most Javanese farmers, rice is the incarnation of *Dewi Sri*. Because of this, many Indonesians regard rice as being more highly than other crops such as maize, cassava, and sago. Moreover, traditional communities often treat rice like a human being. People have a spiritual relationship with rice, so each stage of rice cultivation as well as rice processing starts with a ceremony to honour *Dewi Sri* in order to get blessings from her and manifest the farmers' thankfulness (Ismani, 1985:125).

²⁰ 'Dewi' means goddess or queen, 'Sri' means glow of the world or pearl (Greve, 2005:10)

²¹ This description is based on Adimihardja, 1998.

Rituals in relation to wet rice cultivation

The legend of *Dewi Sri* as described above has many practical implications for wet rice cultivation in Indonesia. According to Ismani (1985:120-121) six main rituals can be distinguished, one for each stage during the cultivation and processing. These stages consist of seedling, land preparation, planting, ripening, harvest and storage. We will elaborate each stage shortly below²². Note that these stages and their related rituals are especially applicable to wet rice cultivation on Java.

Indonesian farmers call the stage of seedling *tabor benih*. Before planting the seeds in the seedbed, they conduct a ceremonial food offering called *nyebar wiji*. This is an act to inform *Dewi Sri* that they are going to start to grow rice and to ask her to help the seeds grow well and that a good yield will be the result.

Executing the next ritual occurs in relation to the preparation of land. Before ploughing the land, farmers conduct a food-offering called *wiwit ngluku* (the beginning of land ploughing) to ensure that the farmers can finish the work safely.

The continuing phase is planting. When the farmers start planting rice, they execute a food-offering ceremony called *bubur bumi*, so that the rice will grow well and produce a good yield. After finishing the planting of rice, another ceremony called *buntoni* (closing) takes place, through which the farmers hope that there will be no loss in yield and no empty grains.

During the ripening period, people carry out a ceremony called *keleman* to honour *Dewi Sri*. They perform *keleman* in a way similar to the ceremony for a seven-month pregnant woman, because they believe that rice during the ripening period is comparable to the pregnancy of *Dewi Sri*. People place food offerings in the corners of rice fields with the hope that pregnancy will be safe and the yield will be high.

Prior to harvesting, a ceremony called *metik* is held so that rice will not be destroyed by plant disease and the harvesting will be finished successfully. Immediately after finishing the harvesting, the farmers conduct a thanksgiving ceremony called *sedekah bumi*. The offerings consist of various kinds of rice food. This is to express their thankfulness to God that rice growing has been successful with a high yield.

The last stage consists of sun drying and storing the rice in the granary. The farmers are not supposed to take out rice for forty days; otherwise the storage will end up quickly.

This short analysis of the most relevant rituals on Java in relation to wet rice cultivation shows that the importance of rice becomes visible through rituals based on thoughts, feelings and convictions. The belief that a rice plant carrying grains is almost similar to a pregnant woman shows once again that rice is far more than food alone. For traditional rural communities in Indonesia, rice means life, not only practically but also symbolically and emotionally.

3.4 Authority and its legitimacy in traditional rural communities

3.4.1 Introduction

The second hypothesis states that the form of traditional authority in a rural community might make the integration of modernisation influences within wet rice cultivation in Indonesia less accessible. This hypothesis makes it necessary to explain the theoretical background of traditional authority in traditional rural communities. It is also relevant to understand the process of acceptance by the people of a community, of the power that arises from traditional authority. In social sciences, one of the concepts that is commonly used for 'acceptance of authority' is legitimacy. Thus, explaining the concepts of traditional authority and legitimacy is the main focus of this paragraph.

²² The information in this section is based on Ismani, 1985:120-121.

3.4.2 *Traditional authority in rural communities*

Traditional rural communities in Indonesia are often under influence of official authorities. In many cases however, they do also have their own informal and traditional authorities. To understand the concept of 'traditional authority', we will first focus on the concept of 'authority'. Mitchell uses the following definition for authority:

"Authority is one of the major forms of power through which the actions of a plurality of individual human actors are placed or maintained in a condition of order or are concerted for the collaborative attainment of a particular goal or general goals" (Mitchell 1979:12 in Mitchell 2000:27)

In this thesis, 'a plurality of individual human actors' must be seen as all those members of a traditional rural community who are under influence of authority and that do not have a form of authority themselves.

The definition of authority makes it necessary to define the concept of power too. Van Doorn defines power as follows:

"Power is the ability to, in accordance with the objectives of a person or group, consciously limit the behavioural options of other persons or groups" (Van Doorn, 1989 in Ten Haaf et al, 2002:570)

This definition of power implies that a traditional leader of a rural community cannot have authority. There can only be evidence of authority of a traditional leader in the form of power. Indeed, authority becomes visible through power. Authority is therefore power, accepted by those who are subjected to it (Ten Haaf et al, 2002:572).

Laksono (1990:39) states that the physical power of rural kings that ruled on Java several centuries ago was not enough. The king also had to deflect supernaturally induced disturbances, and for this he needed to have extra-physical or magical power, called *kasekten*. Today, this is still applicable in some rural areas of Indonesia. Thus, the traditional leader has to show his physical and extra-physical power occasionally, in order to maintain the belief of the members of the community that he has indeed these powers.

Thus, I would like to redefine traditional authority as:

"The physical and extra-physical power of one or more persons which is accepted by the members of a traditional rural community, through which the actions of the members are placed or maintained in a condition of order"

The question remains what the role is of a traditional leader in a rural traditional community. Moertono (1981:3) regards this role as giving guidance to the social organisation of the community. This does not mean that he is involved in the members' daily routine. He is intensely involved however in maintaining adherence to establish social patterns, the main manifestation of harmony and coherence of the community.

In relation to the possible integration of modernisation influences in wet rice cultivation, the role of a traditional leader can be decisive. Moertono (1981:4) mentions in this respect that the leader is 'expected to uphold the established order and not to introduce any innovations'. We can understand this from the fact that he is responsible for the harmony and balance in the community. As has been elaborated in section 3.3.1 on cosmology, traditional rural communities believe that disturbing balance and harmony might cause disaster.

3.4.3 *Accepting traditional authority – the concept of legitimacy*

Considering every day decisions within the utilisation of *sawahs*, the leader of a traditional rural community in Indonesia is of a very high importance. Especially if it comes to decisions with regard to the timing of a certain stage in wet rice cultivation, his influence is decisive.

The overall management of the *sawahs* by the leader of a traditional society might be of crucial importance with regard to the intensity in which modernisation influences can integrate into traditional societies.

The source of power that arises from traditional authority is based on different ideas compared to power that arises from non-traditional authority. As has been explained in paragraph 3.2.3, in many traditional societies in Indonesia the belief exists that the ancestors have laid down the rules for *adat*. This also implies that a leader is 'being laid down' or chosen by the ancestors. In short, the members of the community regard him as a descendant of the 'Almighty'. On the one hand, this might be partly comparable to an aristocrat landlord in the Middle Ages. On the other hand it is – at least in a certain way – contrary to the Western perception of the legitimacy to rule because in this case, the right to rule is based on democratic principles.

Explaining the concept of legitimacy is rather complicated since many authors use different definitions. First, we will set some boundaries around the concept. In this case, we are relating legitimacy with a traditional social group, living in a rural area of Indonesia. Official authorities relating to other institutions are not part of this analysis.

Bodansky has written several interesting articles on the concept of legitimacy. He explains legitimacy as being:

"The justification of authority – the authority, for example, of legislatures to prescribe legal rules or of courts to decide cases. Legitimate authority simply means 'justified authority', and can be related to specify what factors might serve as justifications – for example legality, democracy, rationality or tradition" (Bodansky, 1999:601)

To put this explanation in other words, legitimacy is the acceptance by people of authority. Again, authority cannot be seen here as official authority, but has to be seen as traditional authority. It is also essential to note that legitimacy in this sense has no relation with the question whether this authority is 'good' or 'bad'. It does have a strong relation however with the question *why* people *accept* traditional authority.

Mitchell (1979) has examined the work of Max Weber, who distinguished three different modes of legitimacy: the traditional mode, the charismatic mode and the rational-legal mode. In relation to the legitimacy of traditional leadership, especially the traditional and the charismatic mode are of interest.

In the traditional mode, we can derive legitimacy from one of three beliefs. First, legitimacy can be based on the belief that the institutions of authority are continuous with institutions, which have existed for a very long time. Second, legitimacy can be founded on the belief that the exerciser of authority has acceded to the authoritative role by a procedure and in accordance with qualifications that have been valid for a very long time. Third, legitimacy can be based on the belief that the commands are either substantially identical with commands which are believed to have been valid for a very long time or are exercised in accordance with a discretionary power which the incumbents, or the predecessors with whom he is legitimately linked, have possessed for a very long time (Mitchell, 1979:14).

In the charismatic mode, legitimacy rests on the belief that the exerciser of authority and the rule or command that he enunciates, possess certain sacred properties (Mitchell, 1979:14).

As Mitchell mentions, the legitimacy of authority is imputed on the basis of beliefs about some direct or indirect connection with some ultimate legitimating power. Ultimate legitimising powers could be the will of God, the founders of the dynasty or society, natural law, the will of the people, and so on. Therefore, legitimacy rests on beliefs about some imputed connection with a sacred, charismatic source (Mitchell, 1979:14). Laksono supports this statement in his book on traditional kingship in Java. The kingships in Indonesia of more than five centuries ago are still partly comparable to some traditional rural leaders of today. Laksono writes that in those times:

“Kingship must characterise something ethereal, as it were, and absolutely beyond reach of the five senses. In classical times this was conceptualized by associating it with the situation in the supernatural realm where the gods’ role was absolute in guaranteeing the perpetuation of order in the macro-cosmos” (Laksono, 1990:14).

Thus, the source of power or the right to rule in relation to the justification of traditional authority is not a matter of choice of the non-authoritative members of a traditional community. In the perception of the entire traditional community, whether authoritative or non-authoritative members, the basis of power in relation to traditional authority is the choice of the ancestors.

3.5 Linking the theoretical concepts

In this chapter, we elaborated several relevant concepts in relation to the two hypotheses of the introduction. To come to a clear definition, it was necessary to deal with each concept separately. However, they are all inextricably connected to each other. We will illustrate this shortly below.

The identity of a traditional rural community is an overarching concept, because the concepts of tradition, *adat*, cosmology, myths and rituals all directly relate to it. This also applies to the way in which a traditional leader governs a traditional community. Identity makes a traditional community distinguishable and recognizable from other communities. For such a community, tradition is the most important way of making clear that it is different from others because of their customs, habits and behaviour. Tradition is therefore the cornerstone of identity and in relation to wet rice cultivation tradition is – among others – expressed by ceremonies, rituals and myths. Moreover, as we shall see in the following chapters, tradition can imply the obligatory use of specific tools for wet rice cultivation. *Adat* provides the sacred rules for tradition, which are laid down by the ancestors. They are guidelines for living for all members of a traditional community, in a moral and a behavioural sense. We can connect this to cosmology, the way in which many rural traditional communities look at the universe. People of such a community believe that maintaining the harmonious cosmic balance is of crucial importance to avoid disasters.

To maintain the social cohesion, a traditional community needs a strong traditional authority. The physical and extra-physical power of a traditional leader plays a significant role here. Acceptance by the members of a community of their leader is based on the belief that the ancestors have chosen him as the true leader. These members often regard their leader as being half god, half-human. At the same time, the leader has to prove his supposed capacities in relation to the physical and extra-physical powers he has. Rituals in such occasions are often a manner of showing the power of the leader. In this way, the belief of the non-authoritative members of the community in their leader is maintained and reinforced. We can conclude that traditional authority is based on power, the basis or legitimacy of this power is based on *adat*, and *adat* is based on rules that are laid down by the ancestors.

3.6 Conclusion

The goal of this chapter is to introduce a number of key concepts that assist in understanding the reasons of why traditional rural communities in Indonesia do not always adopt modernisation trends in wet rice cultivation. To explain these differences, we have constructed two hypotheses. The first hypothesis states that it might be possible that some rural communities in Indonesia do not want to modernise their wet rice system because rice production directly relates to their identity. The second hypothesis considers that the form of traditional authority of a rural community might make the integration of modernisation influences less accessible. With these two hypotheses as a starting point, we made a selection of relevant theoretical concepts in order to test their plausibility.

For those traditional communities in Indonesia that cultivate wet rice in a traditional way, the meaning and background of identity, tradition and *adat* play a crucial role. These three concepts are the focus of the first paragraph in this chapter. Identity is defined as 'a symbolic construction of a coherent totality of specific characteristics of a social group, making this group distinguishable and recognisable from other social groups and attributing a meaning to the customs, habits and behaviour of this social group'. Tradition is defined as 'customs, habits and behaviour of a specific social group that have been passed down from generation to generation, for the survival of the same customs, habits and behaviour, and the survival of the identity of this social group in general'. Lastly, we defined *adat* as 'a set of sacred rules which are to be maintained'. The concepts of identity, tradition and *adat* form the basis of all other concepts in the remaining part of the chapter.

The next paragraph deals with a number of symbolic aspects within traditional wet rice cultivation. Especially on Java, people in small rural societies have a cosmological and holistic view of the universe. They believe that everything relates with everything. Therefore, it is of utmost importance to maintain the harmonious balance in the universe. Continuing the way in which wet rice is cultivated might be part of maintaining this harmonious balance. Myths and rituals make this vision more clear and enact them. Moreover, they often assist in expressing the identity and tradition of a rural community. The legend of rice goddess *Dewi Sri* also helps us in understanding this cosmological view of traditional rural communities. It is not surprisingly that satisfying *Dewi Sri* and maintaining the cosmic balance are the most important goals of rituals during the process of cultivating rice.

The last paragraph consists of a description of the concept of traditional authority and its acceptance. We defined traditional authority as 'the physical and extra-physical power of one or more persons which is accepted by the members of a traditional rural community, through which the actions of the members are placed or maintained in a condition of order'. Legitimacy is 'the justification of authority', and assists in finding reasons of why traditional authority is accepted. We can conclude from the literature that traditional authority is based on power, the basis or legitimacy of this power is based on *adat*, and *adat* is based on rules that are laid down by the ancestors.

In relation to the second hypothesis, relevant literature made clear that a traditional leader is expected to uphold the established order and to be reserved with introducing any innovations. This is highly relevant with regard to the possible integration of modernisation influences in wet rice cultivation. We can understand this attitude of a traditional leader from the fact that he is responsible for the harmony and balance in the community. Because of the cosmological view of the universe, members of a traditional rural community believe that disturbing balance and harmony might cause disaster. The worst scenario is of course a failed harvest, causing a shortage of rice. However, it does not mean that any innovation is an absolute taboo. Innovations might be accepted as long as they are not in conflict with the identity of a traditional social group.

Combined with the data gathered from the field – in chapter five, six and seven – this conceptual framework will contribute in testing the two hypotheses. In the concluding chapter, we should be able to understand the reasons behind the fact that there are rural communities in Indonesia that do not change and modernise the utilisation and management of wet rice cultivation. But before the field data are presented, the methods and techniques of the research is elaborated in the next chapter.

Chapter four

Methods and techniques of the research

4.1 Introduction

We are going to elaborate the methods and techniques of the research in more detail in this chapter. First, the statement of the problem is described, followed by the research questions. Next, we will focus on the research location, and the different forms of observations used in the field. The following section will clarify the approach of the research. We will conclude the chapter with the methods of interviewing and sampling.

4.2 Statement of the problem and research questions

As has become clear in chapter two, rice production in Indonesia has increased significantly over the last century. One hundred years ago, this was around 2 tons/ha, today it is possible to produce almost 6 tons/ha. Moreover, the total amount of (semi-) technically irrigated land on Java has increased from 800,000 hectares in 1910 to 4,5 million hectares in 2000. Thus, both the yield of rice per hectare as the amount of irrigated hectares have been subject to intensification and modernisation trends.

In many areas of Indonesia, farmers have followed these trends within wet rice cultivation. Yet in other areas, farmers still follow traditional methods and techniques for the utilisation of *sawahs*. Moreover, the management of traditional wet rice systems can be quite different, compared to non-traditional systems. The main focus of this thesis is to explain why these differences do exist in some cases. Note that there are also traditional societies in Indonesia in which the utilisation and management of wet rice cultivation did change. However, we are not going to deal with this category in this thesis.

We can divide the explanations for the impact that modernisation trends might have on traditional wet rice cultivation in two main categories. First, there are the influences from outside on a traditional community. An example is the Indonesian government that is promoting and introducing new technologies for agriculture²³. Second, there are also influences and processes inside the traditional community that can explain how and why modernisation trends can integrate into this community. The second category of explanations is the subject of this thesis.

In order to find these explanations, several research questions have been constructed. They are based on the two hypotheses, as described in the foregoing chapters of this thesis.

Main research question:

How to explain the differences between rural communities in Indonesia in relation to the integration of modernisation trends of the utilisation and management of wet rice cultivation?

Sub questions:

1. How is the identity of a traditional rural community linked to the traditional manner in which wet rice is cultivated?
2. What impact does the identity of a traditional rural community have, considering the integration of modernisation trends in traditional wet rice cultivation?
3. What is the impact of traditional authority considering the integration of modernisation trends in wet rice cultivation?
4. What characterises a traditional wet rice system?
5. Has this traditional system been subject to modernisation influences and if so, how to explain this?
6. What characterises a non-traditional wet rice system?

²³ See appendix 11 for a summary of the report. Consult Bolman, 2006 for the full internship report.

7. Has this non-traditional system been subject to modernisation influences and if so, how to explain this?
8. What are the similarities and the differences between traditional systems and non-traditional systems and how can they be explained?
9. Do both systems influence each other considering utilisation and management of *sawahs* and if so, how can these influences be explained?
10. Do people change from one system to the other system and if so, why do they change and what are the consequences?

4.3 Approach of the research

The main goal of this thesis is to explore why some rural communities in Indonesia do implement new methods and techniques within wet rice cultivation and others not. One way to research this, is a comparative approach. In other words, to understand influences of modernisation trends it is necessary to gather information from both the traditional wet rice system as the non-traditional system. In this manner, the similarities and differences between both systems can become clear to the researcher.

Therefore, we will analyse the traditional wet rice cultivation of the people of the *Kasepuhan* and the non-traditional wet rice cultivation of non-*Kasepuhan* people in the mountains of West-Java. If we combine both analyses with the theoretical framework of chapter three, it is possible present some explanations for the different stages of development in the modernisation of wet rice cultivation in Indonesia

4.4 The research location

We are going to discuss two issues in this section; firstly the circumstances in the field and secondly the arguments for choosing this research location.

The specific village in which the research was done is Ciptarasa, which means so much as 'increasing the feeling' in the Indonesian language. This village (*desa*) is located in the sub district (*kecamatan*) of Cikakak, the district (*kabupaten*) of Sukabumi, and the province (*provinsi*) of West-Java. The closest significant town is Pelabuhanratu, which is a two-hour drive southwards to the Indian Ocean. An important note to make here is that Ciptarasa lies inside the National Park of Gunung Halimun (see [figure 3.3](#) below). This implies that the inhabitants of this village have to comply with the official regulations that are set up for National Parks, considering the utilisation of wet rice fields. Creating a new *sawah* in this area, or extracting wood from the rainforest for building houses, has – at least officially – to be done in consultation with local governmental institutions such as the Agency of Agriculture, Crops and Food (*Dinas Pertanian Tanaman Pangan*) and the Agency of Agriculture and Forestry (*Dinas Pertanian dan Kehutanan*)



Figure 4.1: Indonesia, with a focus on Java



Figure 4.2: Java, with the research location in the southwest



Figure 4.3: Ciptarasa, the research location

The research area was not limited to the borders of Ciptarasa. I also visited other, comparable villages in order to cross check data.

During the research period I stayed with a family in a small house made of wood and palm leaves, like all other

houses of Ciptarasa. The owner of the house was Pak Absor, an employee of the Forest Department of the government of Indonesia.

There are several reasons for choosing this research location. One of them is that it offered an opportunity to do research in a small traditional society, while large cities such as Sukabumi, Bogor and Jakarta are still relatively close. Indeed, the location was remote, but it also offered the possibility to be back into the city if necessary.

Lastly, the fact that these cities are rather close is interesting because of possible influences of modernisation.

It is also quite surprising that despite Java is immensely crowded – it has a population of approximately 110 million people – a number of small traditional societies still exist today. This is quite remarkable because Indonesia faces modernisation trends like many other less developed countries in Southeast Asia. Interesting to consider, is what happens with traditional customs in general when a country is modernising, and more specifically what happens with small traditional societies. In relation to the research questions mentioned above, one can wonder if the traditional utilisation and management of *sawahs* is still the same as before the modernisation era. The alternative possibility is that modernisation trends have indeed integrated into such societies.

4.5 Observations

When I arrived in the village of Ciptarasa I was only able to speak the Indonesian language in a very limited way. Moreover, the area in which the *Kasepuhan* live is part of the Sundanese speaking population of West-Java. In contrast with the Indonesian language, the Sundanese language is quite old, existing for hundreds of years. Quite surprisingly, these languages are not alike at all. Indeed, an individual from East-Java, speaking the Indonesian language cannot understand an individual from West-Java who is speaking Sundanese. In general, the people of the *Kasepuhan* are bilingual, but elderly people are not; they can only speak Sundanese.

Given these facts, observations as a research method become more important. Especially in the beginning of the research period, the composition of the field notes depended more on the things I saw, than the things I heard.

According to 't Hart et al, observations in social sciences can be done by the researcher by splitting the general subject of the research into categories ('t Hart et al,

1998:183). For the field research in Indonesia, four main categories were set up, from macro to micro level: national level, the Gunung Halimun region, the villages of *Kasepuhan* and non-*Kasepuhan* people, and the village where I lived. Each of the four categories is again split up into sub-categories. For the village level, such sub-categories are for example agriculture, traditions, traditional authority and policy and globalisation influences. These sub-categories are split up once more. In the case of agriculture, examples are irrigation, private gardens, *sawahs*, crops etc.

This framework of categories makes it possible to organise field notes, with the help of coding. Such a framework is also applicable for doing interviews. We will elaborate this subject in more detail below.

4.6 Interviews

After approximately one month, I was able to have conversations with the people of the *Kasepuhan* on different kind of topics. Naturally, these topics were still rather simple, because of my limited understanding of the Indonesian language. This made it possible to increase the number of interviews as a research method.

In the beginning of the research, I used unstructured and informal interviews as a basis for a general exploration. The reason for this is to gain trust from the research population, in this case the *Kasepuhan*. Unstructured and informal interviews offer an opportunity to achieve this while they are open-ended. Southwold-Llewellyn (1999:8) writes that especially informal interviews are essential during the first part of research. Later on, when the topic of research was marked out more precisely, I used semi-structured interviews. In this case, lists of the themes or subjects that I wanted to know functioned as a guide. The advantages of this type of interviewing are that the informant can express himself in his own terms. For the interviewer it is possible to follow up any leads that arise during the interview. Semi-structured interviewing is also useful because of the possibility to compare the data, because of the coverage of the same topics with each informant (Southwold-Llewellyn, 1999:9).

Furthermore, I experienced that the people of the *Kasepuhan* are very hard to understand in relation to consistency in their answers. It happened many times that people gave contradicting answers. Sometimes certain topics can be a taboo, or people tend to give answers that are socially desirable according to their opinion. For a researcher in search of 'the true story', this is very hard to deal with. Gradually one learns to adapt to this problem, for example by crosschecking the answers. However, it also means the investment of extra time in some important topics.

Another relevant note is to visit the same respondent more than once. In general, respondents tend to trust the interviewer gradually. In many cases, the second interview with the same respondent resulted in more in-depth answers than the first interview.

About thirty percent of the interviews that took place were face to face with only one individual. Seventy percent existed of group interviews, ranging from two individuals until six individuals. The advantage of group interviews is very clear, while the problem of contradicting answers mentioned above is limited because of the presence of other individuals. It also offers an opportunity to get more information on a topic than with one individual. However, there are also disadvantages, while some individuals in a group are more concentrated than others, and some are more interested in a topic than other individuals are. In short, chances are higher of people starting a totally different conversation.

Both individual and group interviews also have a common disadvantage, which is the likeliness of socially desirable answers. The habit of many Indonesian people to be very polite to their guests can sometimes result in answers that are also very polite. Consequently, an interviewer runs the risk of writing down answers that are adjusted to the things that he or she 'might want to hear' according to the perception of the respondents and the people that are present during the interview. When I interviewed some farmers of the *Kasepuhan* for example, they claimed that their wet rice cultivation is one hundred percent

organic, according to their traditions. Later on, I found out that this is not true, since some people are using fertilisers. They did not tell me because they assumed that I did not want to know about these exceptions.

4.7 Sampling

Since the social cohesion of the *Kasepuhan* is rather high, I used snowball sampling in many cases. After almost each interview, I asked if the respondent knew another person on the same topic or on a different topic. Especially in the early stages of the research, this usually resulted in at least two or three new respondents after an interview took place.

The disadvantage of snowball sampling is when it concerns a narrow topic, of which only a few individuals know about. As a consequence, it can happen that it is not possible to find new informants anymore. On the other hand, snowball sampling works perfectly well in relation to more general subjects of which many individuals have knowledge. A last disadvantage of snowball sampling relates with the statement that I made above on the likeliness of socially desirable answers. In the case of snowball sampling, respondents can direct the interviewer to 'socially desirable persons', both from the perspective of the respondent as from the perspective of the interviewer. The opposite can also be true, that the initial respondent avoids mentioning other important key respondents, for example because their social relation is not that well. In short, with snowball sampling the interviewer might run the risk of not talking to certain important key respondents.

Despite these disadvantages, there are some significant advantages of snowball sampling. As Bernard (1988) mentions, snowball sampling works especially for those kinds of research that concern social networks and groups of people that do have regular contact with each other due to specific reasons, such as small-scale agriculture in developing countries. In short, snowball sampling can be preferable when a research is anthropologically oriented and the research population has a strong social cohesion due to specific reasons.

4.8 Conclusion

In this chapter, we have specified the statement of the research problem, together with the exact research location, the way in which interviews were structured, and how the selection of the respondents for these interviews took place.

This thesis focuses on the way in which modernisation trends influence wet rice cultivation in Indonesia. There are still traditional rural communities in Indonesia that cultivate and manage *sawahs* in a traditional manner. The question is why modernisation trends did not influence these traditional systems, in contrast to other wet rice systems in Indonesia. In order to find the reasons behind different stages of development within the modernisation of wet rice cultivation in Indonesia, we will compare the traditional wet rice system of the *Kasepuhan* with the non-traditional system of non-*Kasepuhan* farmers in the same area of Gunung Halimun, West-Java.

Chapter five

Analysis of the Kasepuhan community

5.1 Introduction

With this thesis, we are trying to find explanations for the fact Indonesian farmers do not always follow modernisation trends in wet rice cultivation. The research population are the people of the *Kasepuhan* who practice traditional wet rice cultivation in the area of Gunung Halimun, West-Java. In order to understand the traditional utilisation and management of wet rice systems, it is necessary to understand the background of the *Kasepuhan* first. Therefore, this chapter focuses on the way of life of the *Kasepuhan*.

First, we are going to concentrate on the relevant historical developments within the community of the *Kasepuhan*. Continuing, a short socio-economical analysis is presented. Next, we are going to review the structure of the traditional authority. Another point of interest is the influence that traditional authority has on traditional wet rice cultivation. The next section clarifies what tradition is according to the *Kasepuhan*. We will do this to make clear that their traditions do not only consist from wet rice cultivation. Nevertheless, rice is indeed highly important for the people of the *Kasepuhan*. Therefore, this chapter also deals with the practical and symbolic meanings of rice. The chapter will end with some general conclusions. Note the information in this chapter is mostly based on oral information²⁴.

5.2 The life of the Kasepuhan

5.2.1 Explaining the existence of three Kasepuhan communities

The *Kasepuhan* are a group of about 5300 people living in the area of southern Gunung Halimun, in the province of West-Java, within the borders of *kabupaten* Sukabumi, Bogor and also southern Banten. We can split up the general group of the *Kasepuhan* into three

subgroups: the first group is lives in and around the village of Ciptagelar, the second group around the village of Cicadas, and the third group around the village of Cisungsang. Each group has its own tribal leader or *Kepala Suku* (Indonesian language) or *Sesepuh Girang* (Sunda language). For Ciptagelar the *Sesepuh Girang* is Abah Encup alias Abah Anom, for Cicadas it is Abah Asep, for Cisungsang it is Abah Usep. Both Abah Anom and Abah Asep are family members. By the time of writing this thesis, it is still unclear whether Abah Usep also belongs to this family.



Figure 5.1: community house of the Kasepuhan

Respondents within the social group of the *Kasepuhan* Ciptagelar, cannot give accurate information about Abah Usep. It is clear however, that the groups of Ciptagelar and Cicadas regard Cisungsang as a separated group. Consequently, there is little communication between Ciptagelar and Cicadas on the one hand and Cisungsang on the other hand. Moreover, there is also some friction between the villages of Ciptagelar and Cicadas. To explain this situation, it is necessary to mention some developments since Abah Arjo passed away in 1982.

Abah Arjo was the traditional leader of the whole *Kasepuhan* community, including Ciptagelar, Cicadas and Cisungsang. After he passed away, a struggle for leadership arose between the sons of Abah Arjo, two of them being Abah Anom and Abah Asep. In the

²⁴ This chapter is derived from the report of Bolman, 2006.

tradition of the *Kasepuhan*, the oldest son does not necessarily inherit the leadership of his father. In other words, the father chooses the son he believes to become the best leader for the *Kasepuhan*. Both Abah Anom and Abah Asep claim that their father chose them to be the next leader of the *Kasepuhan*. From the moment that Abah Arjo passed away in 1982 until the end of the field research in February 2005, the conflict about this issue still exists. An inquiry among non-*Kasepuhan* respondents resulted in the claim that Abah Anom is the true leader of the whole *Kasepuhan* community, without a single exception. Moreover, most respondents did not even know about the existence of a 'second Abah' let alone the existence of a 'third Abah'. The situation became even more complex during a key interview with Abah Asep from Cicadas. He claimed that his father granted him the full leadership of the *Kasepuhan*. For this report, it is not important to know who the real leader of the *Kasepuhan* is. It is interesting to observe that there is actually a form of competition between the traditional leaders. During the research, Abah Asep was just renovating his house, in order to make it severely bigger than before. He admitted that compared to the house of Abah Anom his old house was too small. However, we are now able to understand why the *Kasepuhan* in the southern area of Gunung Halimun are not one group, but different groups, with different leaders and different claims of leadership and power.

As mentioned in chapter four, the location for this research is close to Ciptagelar in the *kampung* (village) of Ciptarasa. Abah Anom established the village of Ciptarasa in 1984. At that time, tens of non-*Kasepuhan* farmers joined him and adapted to traditional wet rice cultivation and all the other *Kasepuhan* traditions. In the year 2000, Abah Anom moved again to Ciptagelar, a village that already existed.

All research data gathered comes from this area. It might be possible that some data is specific for this subgroup of *Kasepuhan*. Therefore, the reader of this report has to keep in mind that the data provided might not be generalised to the other two subgroups. From now on, I will use the word *Kasepuhan* instead of *Kasepuhan Ciptagelar*.

5.2.2 The history of the *Kasepuhan*

The way of life of the *Kasepuhan* is still traditional; however, modernisation and globalisation do have an influence on their way of living. In short, they are not isolated from the rest of Java and Indonesia. To understand the present way of life of the *Kasepuhan*, it is necessary to explain some of their history.

According to unverified oral information, derived from several semi-structured interviews, the *Kasepuhan* have lived in this area for about 560 years. Around the year 1430, the ancestors of the *Kasepuhan* were still living in the area of Bogor, west of Gunung Halimun. At that time, there were also several *Padjadjaran* kingdoms in West-Java, for example in Banten, but also in Bogor. The people of the *Padjadjaran* also followed Hindu as their main religion, but combined this with animism and Sunda traditions.

Abah Anom, the tribal leader of the area, provided more and detailed information about the history of the *Kasepuhan*. According to the written genealogy of his family, the first generation of *Sesepuh Girang* of the total group of *Kasepuhan* was Bao Rosa, living in the *kampung* of Cipatat, *kabupaten* Bogor. He was born in the year 1648, and died in the year 1748. Abah Anom, the present *Sesepuh Girang* belongs to the eight generation. During the interview however, he stressed that there were possibly three up to ten more generations of *Sesepuh Girang* before Bao Rosa. Talking about these ancient leaders is an absolute taboo for all members of the *Kasepuhan*, because they are regarded as descendants from the *Karuhun*. The *Kasepuhan* use this word for ancient tribal leaders that received their power directly from 'The Almighty' of the *Padjadjaran*²⁵.

As mentioned above, the *Padjadjaran* practiced Hindu as a main religion, coming from India to Java around 700 AD. The people who belonged to the *Padjadjaran* obligated themselves

²⁵ Appendix 3 contains a genealogy of the traditional leaders of the *Kasepuhan*.

to upgrade their knowledge about cosmos, earth, water, etcetera continually. But foremost, they were occupied by studying the tiger. Indeed, to obtain full 'tiger knowledge' or *ilmu macan* was the higher goal of life of the *Padjadjaran*. In fact, nowadays still many Indonesians claim that the members of this society were actually half tiger and half human, considering their knowledge, but not from outside²⁶.

That the *Padjadjaran* were indeed living in West-Java and also in the area of Gunung Halimun might be proved by the four megalith sites in the area of southern Gunung Halimun. However, the origin of these sites is still rather mystical, even after much archaeological research.

According to the *Kasepuhan*, their ancestors who lived in the area of Bogor around the year 1430 were also followers of the *Padjadjaran* culture. But it has yet to be explained why the ancestors of the *Kasepuhan* left their living space and decided to move to the area of Gunung Halimun²⁷.

It seems hypothetically and historically right to claim that the ancestors were probably escaping from Islam missionaries. However, I have not been able to verify this hypothesis by literature. Very interesting is indeed that many people, both *Kasepuhan* and -*non-Kasepuhan* claim that not only their ancestors, but also the ancestors of the *Baduj*²⁸ (area of Banten) were escaping from Islam. Even more interesting is the claim from the same people that the *Baduj* and the *Kasepuhan* actually have the same ancestors.

Nowadays Islam influenced the *Kasepuhan*, but they do certainly not follow all the rules of this religion. For instance, I did not observe any member of the community that actually prays five times a day. Just as their ancestors, they have combined several traditions and religions into their own *Kasepuhan* tradition. To be more precise, the *Kasepuhan* are influenced by Islam, Sunda tradition, *Padjadjaran* tradition and thus Hindu, and also animism. In fact, many respondents confirmed – both *Kasepuhan* as non-*Kasepuhan* – that all three *Sesepuh Girang* of the *Kasepuhan* are still fully *Padjadjaran*, and thus they are claimed to have full understanding of *ilmu macan*. Each village has also its own specific leader, which are direct family members of the *Sesepuh Girang*. In addition, these leaders are said to have *ilmu macan* too.

For the research, it is not relevant to find out whether Abah Anom really has *ilmu macan*, or really is *Padjadjaran*. The fact is that this perception has a large impact on way of life of the *Kasepuhan* people. They believe that their *Sesepuh Girang* is indeed able to read their minds, exercise black magic as well as white magic, tell the future, influence the weather and many other things. Acting in conflict with traditional rules or *adat*²⁹, can cause disaster, according to the perception of the people of the *Kasepuhan*. As a result, the belief in the powers of their traditional leader influences the behaviour of all members of the *Kasepuhan*.

5.2.3 Modernisation influences and the contemporary situation

A new era started around the year 1987. In this year, the three-year lasting projects to create roads were finished. Before, there were only small forest tracks to travel from one village or *kampung* to the other. From 1987 onwards, the Indonesian government transformed these tracks into roads of approximately two and a half meters wide. The materials used for building the roads were rocks, found in the area. Since then, transportation with cars and motorcycles to most of the *Kasepuhan kampung*s is possible. In short, 1987 was the beginning of a local modernisation era for the *Kasepuhan*.

²⁶ See for more information on the importance of tigers for cultures in Southeast Asia the work of Wessing, 1986. See also Bakels, 2000.

²⁷ The legend of Prabu Siliwangi and Kiangsantang in appendix 5 reveals more about this subject.

²⁸ See also section 3.3.1. For more information about the *Baduj* consult Wessing, 1977.

²⁹ Consult section 3.2.3 for a description of *adat*.

The impact of this new era was enlarged by projects for hydro turbines in order to generate electricity. In the area of Ciptagelar, these projects were finished in 1997 with three turbines, each having a capacity of 60,000 watt. They replaced the generators in all the *kampung*s that had an average capacity of 4,000 watt. All three projects combined the generation of electricity with irrigation systems. This implies that the irrigation of *sawahs* takes place from 09.00 am until 16.00 pm, and the generation of electricity happens from 16.00 pm until 09.00 am. During the heat of the morning sun, the *sawahs* contain enough water for the *paddy* to grow. When it becomes dark, it becomes colder too, so the water on the *sawahs* does not evaporate very quickly. Another consequence of the hydro turbines is that irrigation of higher areas is possible now.

Both the widening of roads and the installation of hydro turbines in the area of the *Kasepuhan* did indeed have a large impact. From 1997, there was enough electricity for everyone. Those who had some money were able to buy a television or radio and transportation of such products was no longer a problem. However, modern products like televisions and radios are still rather rare in the area. Therefore, there is a slow circulation of money in the villages of the *Kasepuhan*. They earn this money by selling handicrafts to tourists who are visiting the national park, or selling household products from a little shop (*warung*).

By far the most important way of subsistence for the *Kasepuhan* is agriculture. We can split this up into three categories: *sawah* (wet rice cultivation on horizontal fields), *ladang* (dry rice cultivation on slopes) and *kebun* (gardens on horizontal fields). About 85% of the agricultural land of the *Kasepuhan* consists of *sawah*, 10% of the land consists of *ladang*, and 5% of *kebun*. *Sawahs* as well as *ladangs* can be owned privately, but can also be owned by the *Sesepuh Girang*. Next, *kebuns* can be owned privately by a family, by several families, or by the community. Practically the *Sesepuh Girang* also owns a *kebun komunitas*. Therefore, those people who use the *kebuns komunitas* have the obligation to handover a certain part of their harvest to the *Sesepuh Girang*. This is a social gift, which means that there is no fixed percentage that must be given to the *Sesepuh Girang*³⁰.

Although the *Kasepuhan* do not earn money with wet rice cultivation, there are other possibilities to generate a small income. Examples are those people who go to the city to find a job during the dry season when the *sawahs* are not cultivated. Furthermore, the younger generation earns money with the transportation of people by motorcycle. Lastly, the *Kasepuhan* maintain some trade in buffalos, goats and chickens.

Traditional authority is of a very high significance in relation to agriculture, but also in many other respects. Therefore, we will concentrate on this subject below.

5.3 Traditional authority of the *Kasepuhan* community

5.3.1 Structure and organisation of traditional authority

First, it is important to make clear to the reader that the information provided in this section is based on interviews in *desa* Sirnarasa, and the *kampung*s Ciptarasa. Moreover, during the ceremonies in *desa* Sirnaresmi, *kampung* Ciptagelar, the opportunity was taken to execute interviews here. Both villages, including tens of *kampung*s, are ruled by the same traditional leader, Abah Anom. It was not possible to verify if the structure of traditional authority under the leader of Abah Anom is the same as in the other two areas of Cibeas and Cisungsang, which are ruled by other traditional leaders. Compared to the national government of Indonesia, the traditional ruling institution of the *Kasepuhan* has some similarities³¹. The 'President' or the highest traditional leader of the *Kasepuhan* is supported by ministers or *sesepuh*. The difference is that these ministers do not have departments such as agriculture, or economic affairs. The department of these ministers is a *kampung* or

³⁰ The topic of agriculture is elaborated in chapter six, with a special focus on traditional wet rice cultivation as practised by the *Kasepuhan*.

³¹ See appendix 2 for the organisational structure of the Indonesian government.

small village. The *Sesepuh Kampung* is the leader of a small village, belonging to the same bloodline as Abah Anom. This implies that he has the authority in the village, with an emphasis on the food production on *sawahs*, *ladangs* and *kebuns*. Below the *Sesepuh Kampung*, there are seven experts in each *kampung*. The first expert in the hierarchy is the *Dukun Kesehatan*, an experienced medicine man who possesses paranormal power. The second expert is the *Dukun Hewan*, dealing with material and immaterial issues around agriculture. He is also an expert in relation to cattle. Thirdly, there is the *Dukun Paraji*, which is a woman managing the event of a birth. The fourth expert is the *Perbakin*, a person who is responsible for the conservation of flora and fauna. He also has an official permit to shoot with a rifle, which can be used for hunting animals in the forest. This implies that the *Perbakin* has to cooperate with the local Agency of Agriculture and Forestry (*Dinas Pertanian dan Kehutanan*), especially in relation to the national park in which most of the members of the *Kasepuhan* live. Most importantly however is the fact that he leads the *syukuran*³². This is a ceremony for the protection of crops and to get the blessings of rice goddess *Dewi Sri*. Moreover, the *Kasepuhan* also pray for a successful cooperation during the work on the *sawahs*. On the central level – for all members of the *Kasepuhan* – it takes place three times a year in August, December and April. The *Perbakin* plays an instrument

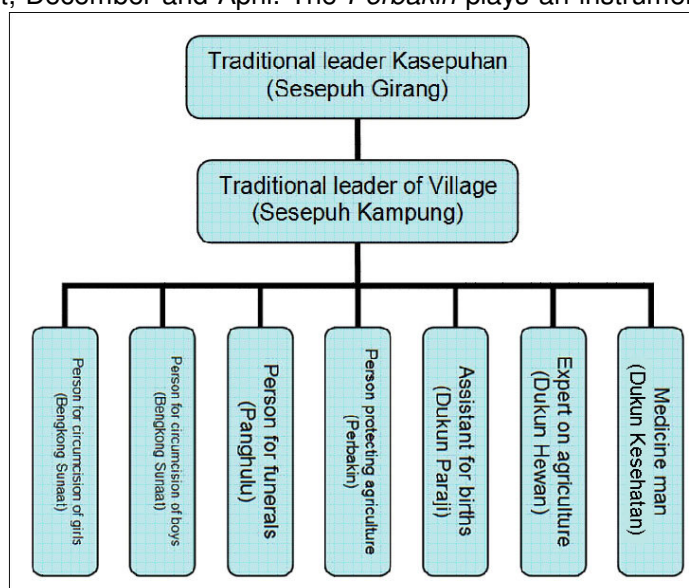


Figure 5.2: organisational structure within the Kasepuhan community

5.3.2 Traditional authority in relation to traditional wet rice cultivation

Within the community of the *Kasepuhan*, Abah Anom, the highest traditional leader, eventually decides which *Kasepuhan* farmer can sow the *sawah* and when. He also decides about the usage of different varieties of rice and the timing of harvest. Moreover, Abah Anom does not allow the utilisation of *sawahs* with modern tools. The legitimacy or acceptance of these decisions by Abah Anom lies with the ancestors³³. In other words, in the perception of the people of the *Kasepuhan*, Abah Anom has the right to decide on these issues, because the ancestors have determined that he is their leader and that his choices are to be accepted. Moreover, Abah Anom is said to consult the ancestors for advice, with regard to the timing of sowing and harvesting. Supposedly, he uses meditation as a method to get into contact with the ancestors. Only one respondent admitted that members of the *Kasepuhan* are sometimes afraid of Abah Anom. Some of them would like to experiment

³² See appendix 6 for an overview of all *Kasepuhan* ceremonies in relation to wet rice cultivation.

³³ Consult section 3.4.3 for an explanation of the concept of legitimacy.

with innovations in rice cultivation but they simply do not dare to try because of the fear for their traditional leader.

Before the sowing period in October, the following institutional processes are taking place within the community of the *Kasepuhan*. After consulting the ancestors, Abah Anom calls the traditional leaders of the settlements together. During the meeting, the knowledge and advice of the ancestors are combined with the agricultural knowledge of Abah Anom and the other leaders. The agricultural knowledge relates to specific geographical circumstances. The most essential factors are temperature, rain and altitude. These factors are again decisive in the choices on the varieties of rice that are to be used. Such meetings are taking place five or six times a year.

After all decisions have been made, the traditional leader of each settlement returns home, and organises a meeting. Subsequently, the experts and the traditional leader of each settlement work out the sowing plan in a very detailed way, together with the owners of the *sawahs*. The consultation lasts for some days and is also a ceremony called *Pongokan*. During the ceremony, the people of the *Kasepuhan* are not allowed to work on the *sawahs*, *ladangs*, or *kebuns*³⁴.

Pongokan is also the period that a local official of the *desa* becomes involved in the decision making process. The official who is responsible for irrigation joins all meetings on village level. The irrigation official certainly has influence on this process. We can explain this by the fact that the *Kasepuhan* are living relatively high in the mountains. The *Kasepuhan* built most of their villages on a large tableland in the highlands of the mountains; therefore, they have access to severe amounts of irrigation water. Given this fact, the *Kasepuhan* do have an advantage in the cultivation of rice. It means that if the *Kasepuhan* farmers use too much irrigation water on their *sawahs*, the *sawahs* below will receive less water. This problem exists only between October and April when the traditional *sawahs* are being cultivated, since non-traditional *sawahs* are being cultivated at the same time. Note that non-traditional *sawahs* are generally cultivated throughout the year. In short, from October until April, people simply need more irrigation water for their fields. Because the demand of irrigation water is approximately twice as high in this period, it is of crucial importance that traditional leaders work out a well functioning plan together with local officials from the *desa*.

5.4 Tradition according to the Kasepuhan

In chapter three we reviewed the theoretical concept of tradition, but we also need to know what tradition means in practice for the people of the *Kasepuhan*. The word 'tradition' is of very high importance to the people of the *Kasepuhan*. We can clarify this by the meaning of '*Kasepuhan*', which comes from the word *sepuh*, meaning 'old'. *Kasepuhan* thus refers to a community or social group in which all the members or the group base their social activities on old or traditional customs (Adimihardja, 1998).

With the help of semi-structured interviews, I asked members of the *Kasepuhan* community to explain to me what they consider as being part of their traditions. It appeared that the *Kasepuhan* traditions can be split up into three categories. The first category is housing, the second consists of customs, habits and behaviour and the third category is agriculture and in specific wet rice cultivation. We will shortly elaborate these three categories below.

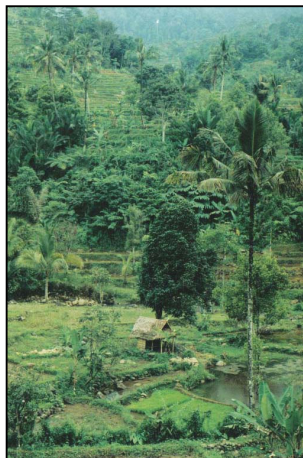
Being a member of the *Kasepuhan* community implies among others that this member must live in a 'traditional house'. People built such houses with materials such as twisted bamboo walls and have a roof of palm leaves. The usage of concrete and stone as building materials for houses is strongly forbidden. Furthermore, the kitchen must consist of a fireplace to cook on. *Kasepuhan* women are obligated to use wood as fuel for cooking. Gas and oil stoves are not allowed to be used in a *Kasepuhan* house. Note that considering

³⁴ See section 5.2.3 for an explanation of *sawahs*, *ladangs* and *kebuns*.

modernisation influences, some *Kasepuhan* houses do have electricity for lighting. Naturally, this only applies for those members who can afford to pay for the electricity.

The *Kasepuhan* store their harvested rice in a bamboo hut called *leuit*³⁵. Indeed, rice is so important for them, that it 'deserves' a private house. The *Kasepuhan* have a ceremony during the ripening period of rice on the fields. They regard this period as comparable to the pregnancy of rice goddess *Dewi Sri*. This implies that the *Kasepuhan* treat rice as a human being. Therefore, the traditional *leuit* is the ultimate symbol of the identity of the *Kasepuhan*. We can find this symbol among others above the main doors of the community house in Ciptagelar.

The second category of *Kasepuhan* traditions consists of customs, habits and behaviour³⁶. By far the most important aspect of this category is the vision that they have of the universe and human beings, as described in section 3.3.1 on cosmology. This belief influences all aspects of the lives of *Kasepuhan* members. They even have a specific name for their belief, which is *tatali paranti karuhun*, or the ancestors' way of life. The *Kasepuhan* are convinced that in the universe physical elements and social systems are intimately connected. Moreover, they think that disturbing the regularity of various physical or non-physical components, which are alive in the universe, can cause disaster for human life. Examples of such components are the ecosystem, the four elements, the ancestors, spirits, gods and goddesses. Therefore, the main duty of people is to maintain the balanced relationships, which exist between the various components. The *Kasepuhan* express these efforts in various ceremonies. An example is the circumcision ceremony or *nyalametkeun*. A medicine man carries out the circumcisions and does ritual offerings in order to get the sympathy of the spirits. Nevertheless, we can find most examples of ceremonies in relation to agriculture and more specifically in wet rice cultivation. We will review this below, as part of the third category of *Kasepuhan* traditions.



The agricultural systems of the *Kasepuhan* play a crucial role in their traditions. Especially the way in which the *Kasepuhan* are practising agriculture, makes this community distinguishable from most other rural communities in Indonesia. Considering traditional wet rice cultivation, farmers use their *sawahs* once a year, with only one harvest. Second, the tradition of the *Kasepuhan* does not allow any usage of chemical fertilisers and pesticides in *sawahs*, *ladangs* and *kebuns*. However, some people do use fertilizers in combination with natural compost or humus. Third, *Kasepuhan* farmers are obligated to use 'traditional tools' for the cultivation of *sawahs*. Fourth, the harvest from agriculture is for the feeding of the *Kasepuhan* people themselves, and not for sale. They can only use a small part of the harvest to exchange food for shoes or clothes etc.

Figure 5.3: sawahs in the area of Gunung Halimun National Park

Summarising, the three categories of *Kasepuhan* traditions are conditions or qualifications for being a member of the community. Not to meet one or more of these conditions of tradition means that a person is not allowed to call him- or herself '*Kasepuhan*', because he or she has lost the '*Kasepuhan identity*'. It also implies that this person has to leave the traditional village in order to live in a non-traditional village. At the same time, he or she is not regarded as an enemy or a traitor that ruins the traditional community. Friendships and family ties are maintained in this case, the only difference is that this person is not living in

³⁵ See figure 3.1 on page 23 for a picture of *leuits*.

³⁶ This section is based on semi-structured interviews in combination with the article of Adimihardja, 1998.

the territories of the *Kasepuhan* anymore. However, those ex-members of the community can also experience difficulties. No longer do they get the blessings of the ancestors. Moreover, when a harvest fails, they do not get instant help from the traditional leader of the village or the overall leader of the traditional community.

Members of the *Kasepuhan* that marry a non-*Kasepuhan* also have to leave the community. Marrying is not a problem, but also in this case, the *Kasepuhan* member cannot call him or herself *Kasepuhan* any longer and the married couple has to live outside the territory.

As far as I could observe, the traditional authority does not have to make decisions on this subject. All members know the rules of tradition and the implications of not following these rules. Thus, leaving the community is always a decision that is well over thought.

5.5 Practical and symbolic meanings of rice

It has become clear now that the cultivation of rice is a cornerstone of the traditions of the *Kasepuhan*. The question arises, what rice actually means for them. During many semi-structured interviews, I asked respondents within the community about their practical and symbolic perception around the importance of rice to their daily lives. It appeared that there are three main explanations.

First, there is the practical explanation. Rice is by far the most important food for the *Kasepuhan*, as well as for almost every other inhabitant of Indonesia. People eat rice as a main part of their menu three times a day, often combined with vegetables and sometimes fish. Thus, during the interviews, the first answer was that 'rice fills your stomach, you simply need it to stay alive'.

The second explanation is less practical, however very important. Many respondents claimed that eating rice, especially from a new harvest, is 'filling your body with happiness'. The *Kasepuhan* feel that from the moment they can eat the rice, the six months of hard work on the *sawahs* is being fully rewarded. During half a year, people invested the largest part of their time and energy in the sowing, irrigation, maintenance and harvest of the rice. Eating rice they cultivated themselves, is indeed experienced by the *Kasepuhan* as full happiness.

The third and last explanation is even more symbolic. Eating rice for the *Kasepuhan*, means becoming one with everything; the ground, the cosmos, the water, wind and fire. The *Kasepuhan* experience eating rice as the true integration of human beings with the four elements, the cosmos and the immaterial with the material.

In section 3.3.2 of the theoretical framework, we already reviewed that many traditional communities that cultivate rice, regard it as the incarnation of *Dewi Sri*. Because of this, these communities treat rice like a human being; and therefore it 'deserves' a separate house or *leuit*. Many Indonesians have the conviction that rice as a crop is higher of status compared to other crops such as maize, cassava and sago. The *Kasepuhan* make clear they indeed have a spiritual relationship with rice.

With their ideology of cosmivision, as Adimihardja (1998) calls it, they believe that the universe will continue to exist as long as its laws of regularity and equilibrium, controlled by its cosmic centre, can keep the universe's elements in balance. It is the ancestors' way of life and its key characteristic existed and still exists out of traditional wet rice cultivation.

5.6 Conclusion

In this chapter, we have analysed the community of the *Kasepuhan*. The historical analysis provides an explanation for the complexity of the identity of the *Kasepuhan*. As has been mentioned, their way of living consists among others of a unique mixture of animism, Hindu, Sunda and Islam traditions. This chapter has made clear that this social group is not living isolated from the rest of Java and Indonesia. Although we can regard their society as 'traditional', modernisation influences do have an impact. Those few people who can afford a television can now see – with their own eyes – how life is in the 'big city'. In addition, they

do certainly not always realise that television presents a perfect image that does not exist. Furthermore, motorcycles and four-wheel-drives make the *Kasepuhan* far more mobile than they used to be. Consequently, it is possible to realise the 'dream' of going to the big city.

We have also analysed the structure of traditional authority in this chapter. By now, the policy of this authority has become clear. Traditional leaders allow the members of the community to modernise their way of life, as long as they do not break with their traditions. These traditions consist of three main categories, which are housing, customs, habits and behaviour and of agriculture. More concretely, it means that a member of the *Kasepuhan* is obligated to live in a traditional house, follow the sacred rules of *adat*, participate in traditional ceremonies, and maintain traditional wet rice cultivation and the agricultural customs in general.

We can conclude that modernisation trends do have an impact on the society of the *Kasepuhan*, but the traditional way of cultivating *sawahs* still exists. Just as they did centuries ago, the *Kasepuhan* still only have one harvest a year, use traditional tools for cultivation and do not use chemical fertilisers and pesticides. Over the past centuries, their way of life has been changing repeatedly, but their material and spiritual connection to the *sawahs* and rice has stayed the same. Rice is the ultimate core of the identity of the *Kasepuhan*. It was the key feature of the life of their ancestors; and being *Kasepuhan* implies living the ancestors' way of life.

Now the life of the *Kasepuhan* has become clear to the reader, we can focus on the central theme of this thesis. In the next chapter, we will analyse both the traditional as the non-traditional wet rice system in a comparative perspective.

Chapter six

Analysis of traditional and non-traditional wet rice cultivation

6.1 Introduction

In this chapter, we will analyse traditional wet rice cultivation of *Kasepuhan* farmers and non-traditional wet rice cultivation of non-*Kasepuhan* farmers. The first group lives in and around the village of Ciptarasa; the second group lives a few kilometres downwards, in and around the village of Cisarua. Both villages are situated in the southern area of Gunung Halimun, Wes-Java. The main goal of this chapter is to clarify the characteristics of both systems. Once this is clear, we can understand the differences and similarities between these systems.

This chapter consists of the following paragraphs. First, we will construct a framework for analysing both systems. This is based on the planting cycle of *paddy*; therefore, it consists of six phases that can be distinguished in wet rice cultivation. The following paragraph focuses on the characteristics of traditional wet rice cultivation. Continuing, we will concentrate on the characteristics of non-traditional wet rice cultivation. Then, we will compare these systems with each other in order to clarify the differences and similarities. The chapter ends with some important conclusions. Note that the information of this chapter is totally based on field data.

6.2 Comparative framework for analysis of both systems

In order to analyse both traditional wet rice cultivation of the *Kasepuhan* and non-traditional wet rice cultivation of non-*Kasepuhan*, we will construct a comparative framework. This framework exists from six different phases in wet rice cultivation applicable to both systems, from the first decisions on irrigation until the processing of the harvested rice. Below, you will find a table that contains all phases and sub-phases.

Table 6.1: comparative framework for the analysis of wet rice cultivation

	General phase	Sub-phase	Details
1	Planning	Timing	when and who
		How	way of working, technologies, who
		Irrigation	when, who, how much
		Ceremonies	which one, why
2	Ploughing (<i>membajak</i>)	Timing	when and who
		How	way of working, technologies, who
		Irrigation	when, who, how much
		Ceremonies	which one, why
3	Sowing (<i>menanam</i>)	Timing	when and who
		How	way of working, technologies, who
		Irrigation	when, who, how much
		Ceremonies	which one, why
4	Maintenance (<i>merawat</i>)	Timing	when and who
		How	way of working, technologies, who
		Irrigation	when, who, how much
		Ceremonies	which one, why
5	Harvesting (<i>di panen</i>)	Timing	what, when and who
		How	way of working, technologies, who
		Ceremonies	which one, why
6	Post-harvest processing	Timing	what, when and who
		How	way of working, technologies, who
		Ceremonies	which one, why

In the next part of the chapter, we will first discuss traditional wet rice cultivation, followed by non-traditional wet rice cultivation. Both parts are constructed according to table 6.1.

6.3 Traditional wet rice cultivation

The data presented in this paragraph is gathered in the southern area of Gunung Halimun, West-Java. In geographical terms, the village of Ciptarasa was the research location, because the traditional *sawahs* are situated in this area. However, the respondents for the interviews were both *Kasepuhan* as non-*Kasepuhan*. I used both observations as interviews for collecting this data³⁷.

6.3.1 Traditional wet rice cultivation – planning

In November of each year, the *Sesepuh Kampung* or leader of each village goes to Abah Anom – the overall traditional leader or *Sesepuh Girang* – to discuss the new growing season. Abah Anom is said to consult the ancestors for this. Together they decide on the timing of irrigation, which varieties of rice to use and the timing of sowing and harvesting. In this process, Abah Anom certainly has the last word. After a plan is constructed, each *Sesepuh Kampung* returns to his village. He organises a meeting with the *sawah* farmers and invites the Rukun Tetangga (RT)³⁸. The experts of agriculture (*Dukun Hewan*) and the expert for protection of agriculture (*Perbakin*) also join this meeting. Together they work out the central irrigation plan of Abah Anom in more detail. The main goal is to provide enough water for each farmer and to avoid discussions about the allocation of water during the growing period³⁹.

Sawahs that are connected to the same irrigation source, e.g. a river branch, need to be cultivated in a certain order. If a *sawah* on lower altitude is ready for irrigation but the ones on a higher altitude are not, irrigation of the lower *sawah* is not possible since all *sawahs* together form a closed irrigation system. Therefore, the cultivation of *sawahs* generally starts with the ones on the highest altitudes. Once these fields are filled with irrigation water, the lower fields can also receive water. Note that since 1997 new concrete irrigation systems make it possible to cultivate higher areas.

During the five months that the rice is growing, farmers are continuously in contact with each other, in order to maintain the perfect depth of thirty centimetres of water on the *sawah*. When a farmer uses too much water through which the *sawahs* below contain too few water, a dispute can arise. If they cannot agree, the *Sesepuh Kampung* and the RT will negotiate to settle the dispute. This negotiating also takes place when a drought period causes shortages of irrigation water. In general, all respondents agree that the cooperation between *Kasepuhan* farmers, the *Sesepuh Kampung* and the RT works fine.

6.3.2 Traditional wet rice cultivation – ploughing

The cultivation of the horizontal fields starts in the month of December, when the raining season has already started. If a *sawah* was used for fish breeding, it is necessary that the fish are caught, the water is gone and the field dry. In this case, *Kasepuhan* farmers usually leave the *sawah* uncultivated for at least a month, so that weed (*tunggul*) can grow and function as a natural fertiliser later on in the process. During the preparation period, farmers will check the condition of the irrigation systems and do reparations when necessary.

Farmers always plough in two phases. The first phase happens with two *kerbaus* or buffaloes that drag a plough called *sinkal*. This tool has only a single piece of iron to cut open the soil in a very rough manner. One of the labourers stands on the *sinkal* to make sure that

³⁷ Consult appendix 7a and 7b for illustrations of traditional and non-traditional tools.

³⁸ See appendix 2 for the organisational structure of the Indonesian government.

³⁹ Normally an official called *ulu-ulu* is involved in irrigation manners. However, respondents did not mention such an official during the interviews.

it is sliding through the soil on the right depth. He also has a whip (*pecut*) to make the *kerbaus* move in the right direction.

When the first phase of ploughing is finished, the field is ready for the first irrigation water. Naturally, the farmer and labourers have to inspect if the small dikes or *galeungan* are strong enough to hold the water. They also need to check if the *sawahs* that are laying above are filled with irrigation water. Generally, the *Kasepuhan* farmers aim at approximately five centimetres of water during the second phase of ploughing.

This second phase happens with a plough shaped like a broad fork with nine teeth, called *garu*. Again one of the labourers sits or stands on the plough to make it go deep enough and to steer the *kerbaus* in the right direction. The labourers use a large knife (*bedog*) a pitchfork (*garpu*) and a spade (*pacul*) to clean the dikes from weed and spread it around on the field. Because it is going to decay in the water, it serves as a natural fertiliser. Farmers do not use manure from *kerbaus* or goats as a fertilisers because 'it stinks too much'. Moreover, *Dewi Sri* might be insulted when farmers give her manure.

The time that a farmer needs for the two phases of ploughing depends especially on the *kerbaus*. Two *kerbaus* can work approximately four times faster than labourers can. Thus, those farmers who own *kerbaus* or can afford to hire them, certainly have an advantage. During the field research, lasting from November 2004 until February 2005, the costs for hiring labour were Rp. 15,000 (€ 1,25) per person for eight hours of work, including two meals. To hire two *kerbaus* a farmer had to pay Rp. 40,000 (€ 3,40).



Figure 6.1: two *kerbaus* drag a *garu* during the ploughing process

6.3.3 Traditional wet rice cultivation – sowing

When the ploughing is finished, the *sawah* is not ready for the phase of sowing yet. First, the farmer will level the total surface with a tool called *garok*. After this, it depends on the sowing plan of Abah Anom and the leader of the village when the farmer can start sowing and from which varieties of rice he can choose⁴⁰. These varieties have to be of a traditional origin. Modern varieties that are crossbred or genetically modified are not to be used. Because chemical fertilisers and pesticides are not allowed, it is of a crucial importance that farmers do not use the same variety of rice year after year. Otherwise, the fertility of the soil will decrease and the possibility of vermin destroying the crop becomes higher. Generally, there is a period of at least one week in between ploughing and sowing, so that the weed in the water and soil has the time to decay and serve as natural fertiliser.

If all decisions of the leaders are clear, the farmer calls his family together in order to carry out a ceremony called *tebar*⁴¹. We have been dealing with this ceremony already in section 3.2.4. It became clear that the main reason for *tebar* is to get the blessings of rice goddess *Dewi Sri*. Farmers reserve a small part of the *sawah* for this, until the moment of harvesting. First, the family that owns the *sawah* prays to *Dewi Sri*, this is called *tumbu*. Then, they burn some incense in a little tray of straw, standing on a stick, called *pungpuhnan*.

⁴⁰ Consult appendix 8 for a list of traditional and high-yielding rice varieties.

⁴¹ See appendix 6 for an overview of all *Kasepuhan* ceremonies in relation to wet rice cultivation.

The head of family then lays a first rice branch (*rangeuy*), pointing to the south. This is because the *Kasepuhan* believe that there is a relation between the wind direction of the south and the female. The next rice branch is pointing to the north, which stand for the male. According to the *Kasepuhan*, the husband is responsible for the income of the family; the wife is responsible for fertility and taking care of the family. Only a combination of the two can be successful. The third and a fourth rice branch are pointing to the east and west. This stands for the direction where the sun rises and sets. In the middle, where the incense stands, the female, the male, and the sun are coming together. The incense stands in the new rice field, the water, and the fertile soil. During the rest of the process of cultivation, this special part of the *sawah* is left untouched.



After this ceremony, the women are starting to sow, using rice branches that have been lying in the *leuit* for two years. They lay the rice branches of about fifteen centimetres long on the soil with a distance of approximately ten centimetres from each other⁴². Out of each rice branch, five up to ten new rice plants will grow. Supposedly, this task is reserved for women, because the *Kasepuhan* believe that rice during the ripening period is comparable to the pregnancy of *Dewi Sri*.

The women do not sow the total surface of all *sawahs* like this. In most cases a small *sawah* is reserved in which the plants are growing very close to each other for one month. This area is called *pabinihan*. Another possibility, in case of large *sawahs*, is to reserve a part of the field for *pabinihan*. After one month, when the *paddy* is about thirty centimetres high, the women will move the young plants to the remaining parts of the *sawah*. For this phase, they use a tool called *garu*, a large fork with six teeth with a distance of twenty centimetres from each other.

Figure 6.2: a close-up from the traditional ceremony of *tebar*

With the *garu* they make six grooves at the same time, in which the small *paddy* is planted. When the planting of the *paddy* is finished, the level of the water on the *sawah* is raised from five to ten centimetres high. The farmers will try to maintain this height until all *paddy* is harvested. Therefore, the irrigation system is designed in such a way that every surplus of water will flow away, for example during heavy rainfall.

After finishing the sowing, there are two ceremonies called *syukuran*. This is a ceremony for the protection of crops from diseases and animals. Moreover, the *Kasepuhan* also pray for a successful cooperation during the work on the *sawahs* and to get the blessings of rice goddess *Dewi Sri*. On the central level – for all members of the *Kasepuhan* – *syukuran* takes place during the circumcision ceremony (*nyalametkeun*). This is a three-day ceremony organised in the village of Ciptagelar. A person who is responsible for the conservation of flora and fauna, called *Perbakin* carries out *syukuran*⁴³. He plays an instrument called *pantun*, which looks like a large horizontal guitar and at the same time, he tells and sings legends and myths. On village level, the *Kasepuhan* also carry out this ceremony.

⁴² On the front cover of this thesis you can find a picture of women who are sowing. Consult appendix 10 for a schematic overview of sowing on a traditional and non-traditional *sawah*.

⁴³ See section 5.3.1 for more information on *Perbakin*.

6.3.4 Traditional wet rice cultivation – maintenance

From the moment that a *sawah* is planted with *paddy*, farmers have to regularly check the condition of the crop and the irrigation system. An advantage of wet rice cultivation compared to dry rice cultivation is that weed cannot grow in between the plants because of the water. However, it does grow on the small dikes and large amounts of weed are not desirable because the dikes also function as tracks to walk on.

Traditional irrigation systems consist of bamboo, trunks of coconut palms and stones. These materials are easy to get; on the other hand, it is often not strong enough to withstand floods after heavy rainfall. Floods can cause a small disaster when they wash away the *paddy*, which is the most important form of nutrition for Indonesian people. Consequently, it is necessary to check the condition of the irrigation systems continuously during the growing period that lasts until April. In this manner, farmers can aim for the perfect height of ten centimetres of water on the *sawah*.

Throughout the five months, farmers maintain a regular dialogue with each other. When a *sawah* is too dry, a farmer may use extra water from the *sawah* that is lying above without asking the owner, as long as the height of the water is maintained. In this case, farmers expect to inform one another afterwards.

On village level, farmers and their families are carrying out the ceremony of *syukuran* once a month during the growing period. This implies five ceremonies, from December until April. See the section above for more information about this ceremony.

6.3.5 Traditional wet rice cultivation – harvesting

After approximately five months, somewhere in April, the *paddy* is about one meter tall. Again, Abah Anom and the *Sesepuh Kampung* decide on the exact date when farmers can begin harvesting.

Both female as male do assist during the harvesting period. The tool for cutting the *paddy* that they have to use according to traditional rules is called *etem*. Only the last fifteen centimetres of each plant is cut off, the rest of the plant (*tunggul jarami*) is left in the *sawah* and will serve as natural fertiliser for the next growing period. Each person carries a basket or *tolok*, in which the *Kasepuhan* put bundles (*pocong*) of one hundred branches of *paddy*, weighing about five kilograms each. On average, one hectare of traditional *paddy* will produce about two tons of rice.

After all the *sawahs* of a village are empty, irrigation activities will stop, unless a farmer wants to use his field for fish breeding. This is also the moment for the last *syukuran* ceremony on village level. When all *paddy* of the *Kasepuhan* villages is harvested there is another large and central *syukuran* ceremony for all members of the community. This ceremony is held in the village of Ciptagelar and the *Perbakin* is again responsible for playing the *pantun* in combination with telling and singing legends.

6.3.6 Traditional wet rice cultivation – post-harvest processing

The next phase in the process of wet rice cultivation is drying. This happens in a frame with several layers (*lantayan*) on which the bundles are laid. Normally drying of *paddy* happens in the month of May, when the dry season starts. In this time of the year, it takes about two weeks of sunlight to dry the bundles. Afterwards the *Kasepuhan* place the bundles in the traditional hut called *leuit* for storage. Each family that owns one or more *sawahs*, also owns a *leuit*. It is forbidden to take out a bundle for forty days, otherwise the storage will end up quickly. The bundles or *pare rangeuy* can be stored at a maximum of seven months; otherwise the quality will decrease and the rice is not suitable for consumption anymore. However, the bundles and branches can still be used for sowing, even after several years.

The following phase consists of threshing the bundles. This does not happen at once; the threshing is spread out over several months. The work is reserved for women, who use a *lisung* or tree trunk with two small holes and a large one. Note that using a

threshing machine is strongly forbidden by the traditional leaders of the *Kasepuhan*. Each of the four up to six women use a stick called *halu* to thresh the *paddy*. It approximately takes four women three and a half hours of work for fifty kilograms of rice. First, the women place the bundles in the large hole, threshing them for one and a half hours (for fifty kilograms). The goal is to separate the branches from the grains. Next, one of the women uses a flat bamboo basket called *nyiru* to separate the grains from the small pieces of branches. For fifty kilograms, this will take about five minutes. The grains are put into the *lisung* again, but this time in the two small holes. It takes the women about one hour to crush the grains, so that the skin falls off the grain. Again, a *nyiru* is used to separate the grains from the skins. The women will pound the remaining grains for one hour in the small holes of the *lisung* again. Now the fifty kilograms of *nasi* or rice is ready to be cooked.

The *Kasepuhan* use the remaining skins of the grains and the small pieces of branches – called *gabah pare* – in two manners. It can serve as *huut*, or pulverised rice-grain skins, and serve as food for chickens, *kerbaus*, and goats. Farmers also use *gabah pare* as a natural fertiliser on *ladangs* and *kebuns*.

On average, one person eats about 125 kilograms of rice per year, so a family of five persons will need 750 kilograms for their own consumption. The head of the family is also responsible for the elderly people. If grandparents cannot work on the *sawahs* anymore, they will also receive 125 kilograms of rice. Furthermore, there has to be enough rice to feed expected or unexpected guests. From the total harvest, a family consumes approximately 75% of the rice. The family will use the remaining 25% for exchange and for taxes. Note that it is strongly forbidden for the *Kasepuhan* to use rice as a commodity product. It is simply not possible to sell rice and earn money with it.

Considering taxes, each family has to give a certain proportion of the total harvest to the leader of the village. Thus, farmers have to report how many kilograms of rice they harvested. Taxes do not consist of a fixed percentage, so each farmer can decide of how many kilograms this social gift will exist. Naturally, a farmer that owns many *sawahs* is expected to give a larger proportion than a farmer that only owns one *sawah*. In practice this means that poor farmers will give only a couple of kilograms and rich farmers will give ten up to fifteen kilograms. The leader of a village uses the social gifts in two ways. Firstly, to help the poor people who do not have family members that give them rice. Secondly, the leader of a village has the obligation of giving one percent of their tax income to the traditional leader, Abah Anom. He uses the rice to feed the people that join the ceremonies on central level.

In august, the largest ceremony within the *Kasepuhan* community takes place. This ceremony is called *Seren Taun* which is a harvest and thanksgiving festival. It lasts for several days and thousands of people are participating. Only a small part is member of the *Kasepuhan* community, the rest comes from West-Java or other parts of Indonesia. Interesting to note is that there are members of the traditional *Baduj* joining the ceremonies. Officials from the government also visit Abah Anom, in order to maintain their relationships.

6.3.7 Overview of the characteristics of traditional wet rice cultivation

The next planting season starts again in November, with the planning. By now, the cycle of cultivation phases is complete. We can conclude that the *Kasepuhan* only cultivate their *sawahs* one time per year. The system is more or less organic; however, some farmers did admit that they use chemical fertilisers on a very sporadic basis. Apparently, it is still a taboo to act in a different manner in relation to the rules for traditional wet rice cultivation. We can characterise the traditional system by the usage of rice branches in the sowing phase. The usage of high-yielding varieties is forbidden, only traditional varieties can be used. During harvest, farmers have to use a specific traditional tool called *etem* to cut the branches. After harvest, the bundles of branches have to be put in a traditional storage hut; taking out the bundles within forty days is a taboo. Threshing of the branches happens in a hollow tree trunk, using a machine is not allowed. Producing rice with this system implies relative low

costs; however, it is labour-intensive due to the traditional tools that are used. Moreover, the quantities of rice that are produced per hectare are low, but the quality of the rice is high. Lastly, rice for the *Kasepuhan* is not a commodity product, selling it is again a taboo. Thus, rice is only for consumption (75%), exchange (approximately 24%) and taxes (approximately 1%).

See table 6.2 on the next page for a schematic overview of the characteristics of traditional wet rice cultivation.

Table 6.2: characteristics of traditional wet rice cultivation

	General phase	Sub-phase	Details
1	Planning	Timing How Irrigation Ceremonies	Cycle of 5 months with only one harvest, always starting in November Meeting with traditional village leaders, overall leader, also between village leader and RT, farmers Traditional village leader and RT official communicate with farmers During this period there are no ceremonies
2	Ploughing (<i>membajak</i>)	Timing How Irrigation Ceremonies	Starts in first half of December <i>Kerbaus</i> drag <i>sinkal</i> , then <i>garu</i> . Farmers and hired labourers use <i>garpu</i> , <i>bedog</i> and <i>pacul</i> During the second phase of ploughing, 5 centimetres of water stands on the field During this period there are no ceremonies
3	Sowing (<i>menanam</i>)	Timing How Irrigation Ceremonies	Starts in second half of December; traditional leaders decide when to start Branches in <i>pabimihan</i> , after 1 month moved to other areas. Traditional rice varieties are used. During the sowing 5 centimetres of water, when finished the level is raised to 10 centimetres Before sowing: <i>tebar</i> , for blessing <i>Dewi Sri</i> and to reinforce the cosmic view of the <i>Kasepuhan</i> <i>Syukuran</i> for all members of the <i>Kasepuhan</i> and <i>syukuran</i> on village level. For protection of crops
4	Maintenance (<i>merawat</i>)	Timing How Irrigation Ceremonies	January, February, March, April Check condition of crop and irrigation system; no chemical fertilisers and pesticides are used Perfect level of 10 centimetres of water has to be maintained; water has to flow gently <i>Syukuran</i> on village level, once a month, for protection of crops
5	Harvesting (<i>di panen</i>)	Timing How Ceremonies	Second half of April; traditional leaders decide when to start Women and men use <i>etem</i> to cut off the plants. Average harvest is 2 tonnes/ha. <i>Syukuran</i> for all members of the <i>Kasepuhan</i> and <i>syukuran</i> on village level. For protection of crops
6	Post-harvest processing	Timing How Ceremonies	May until November Drying in <i>lantayan</i> , storage of bundles in <i>leuit</i> , threshing by women in <i>ising</i> . Harvest not for sale, the quality of the rice is said to be very good. 1–10 kg of rice have to be paid for taxes. <i>Seren Taur</i> in August, thanksgiving and harvest festival

6.4 Non-traditional wet rice cultivation

The data in this paragraph comes from the village of Cisarua, just south of the village of Ciptarasa. From Cisarua to Ciptarasa it is a steep walk of twenty minutes on a small stony track through a landscape of *sawahs*. Interesting to note is that there are non-traditional *sawahs* in the beginning of the walk, and traditional *sawahs* at the end of the walk. In this paragraph, we will focus on the phases within non-traditional wet rice cultivation.

6.4.1 Non-traditional wet rice cultivation – planning

The non-traditional form of wet rice cultivation can start any time of the year⁴⁴. However, cultivation is easier in the wet season compared to cultivation in the dry season. During the research, a new planting cycle had started in November 2005. We will use this as a starting point for our analysis. The cycle of the non-traditional system implies four months of cultivation, a recovering period of one month and then again four months of cultivation. This implies approximately two harvests per year.

Farmers in the same area that use irrigation water from the same source, construct a plan for equal allocation of water, together with the RT⁴⁵. This takes place a couple of weeks before the sowing phase starts. Because they use the system year round, there is continuous contact between the farmers in relation to the allocation of irrigation water. If farmers cannot solve a dispute on irrigation water, the RT will negotiate, sometimes together with the head of the village. Decisions on the timing of sowing, the varieties to use, and the timing of harvesting is a private matter.

6.4.2 Non-traditional wet rice cultivation – ploughing

For this analysis, the cultivation of fields starts in November, with ploughing the dry *sawah*. Farmers of the non-traditional system cannot use their empty *sawah* for fish breeding, since there is not enough time in between the cycles. Those farmers who want to cultivate fish have to create a separate pond for this. During the preparation period, farmers have to check the condition of the irrigation systems and do reparations when necessary.

Ploughing a non-traditional *sawah* is essentially the same as the two phases of ploughing within a traditional *sawah*. The remains of the rice plants (*tunggul jarami*) of the last harvest, together with the weed in and around the *sawah* are serving as a natural fertiliser. *Kerbaus* drag the one tooth plough in the first phase, and labourers work in those areas where the animals cannot come. The farmers start irrigating their fields after this phase, until five centimetres of water. The second phase of ploughing takes place with nine teeth plough, in order to level the field and mix the water, with the soil and the weed⁴⁶.

6.4.3 Non-traditional wet rice cultivation – sowing

Before sowing can start – somewhere in the month of November in this case – the farmer has to level the *sawah* with the *garok*. After that, the family of the farmer chooses an area of the *sawah* to serve as *pabinihan*. This is the compact area where the *paddy* grows for the first month.

The *paddy* seed comes from the grains of the last harvest, so farmers do not have to buy this, unless they want to try a new variety⁴⁷. Farmers of non-traditional wet rice cultivation can use genetically modified varieties of rice (High Yielding Varieties). However, they can also use traditional rice varieties from the *Kasepuhan*. Moreover, both *Kasepuhan* as non-*Kasepuhan* respondents claim that the quality of traditional varieties is higher than

⁴⁴ Appendix 9 includes an overview of the planting cycles in traditional and non-traditional cultivation.

⁴⁵ Normally an official called *ulu-ulu* is involved in irrigation manners. However, respondents did not mention such an official during the interviews.

⁴⁶ The costs of labour can be found in section 6.3.2.

⁴⁷ See appendix 8 for a list of rice varieties.

the quality of non-traditional varieties. On the other hand, the quantity or the total amount of harvested kilograms of rice is higher when using non-traditional varieties.

Women do the sowing by throwing hands full of *biji pare* or rice seeds in the *pabinihan*. To cultivate one hectare of *paddy*, they need approximately forty kilograms of seed. After one month, the young *paddy* plants are about thirty centimetres high; now they are ready to be re-sowed to the rest of the *sawah* by the women⁴⁸. Prior to this, they make grooves in the soil with the large fork, called *garu*. The women plant the *paddy* at a distance of twenty centimetres from each other. When finished, farmers will raise the level of the water to ten centimetres, until the harvesting period.

6.4.4 Non-traditional wet rice cultivation – maintenance

Maintenance has to take place in between sowing and harvesting, in this case in the months of December and January. Just as in the traditional system, farmers of the non-traditional system have to check the condition of the crop and the irrigation system. Because the non-traditional system implies a cycle of four months, it is necessary that farmers keep in contact with each other throughout the year, especially considering irrigation matters. During the wet season, lasting from October until May, it is also essential that the RT communicates with the farmers, because the non-traditional *sawahs* of Cisarua are situated lower than the traditional *sawahs* of the *Kasepuhan*. In short, non-traditional farmers have to be sure that enough water is flowing downwards in order to fill their *sawahs*. During the dry season, this communication is not necessary since the *Kasepuhan* do not cultivate their *sawahs* in this time of the year. Water is rather scarce in this period, so the non-traditional farmers have to join forces for a good allocation of the water.

Within the non-traditional system, every farmer uses chemical fertilisers or *pupuk*, in order to speed up the growing process of the *paddy*. One week after the plants are moved, the first fertiliser is distributed. On average, farmers use two hundred kilograms of *pupuk* per hectare. After one month, another fifty kilograms per hectare is added to the field. The costs for *pupuk* are Rp. 175,000 (almost € 15.00) per one hundred kilograms.

Farmers also use pesticides to protect the crops against mice and rats. The poison is called *baruang beurit* and is mixed with water, and then sprayed on the field. The mixture consists of two grams of poison with forty litres of water for one hectare of *paddy*. Farmers spray the poison approximately one week after the women have moved the plants, and once more after one month. The costs for pesticides are Rp. 500 per gram (€ 0.04).

6.4.5 Non-traditional wet rice cultivation – harvesting

After approximately three and a half to four months – the crop will be approximately seventy centimetres tall by now – the *paddy* is ready for harvest. Every family can decide on its own when to harvest; however, they need to consider the fact that a large part of the harvest will be sold. This implies that supply and demand will influence the market price of rice and thus the income of this family.

Primarily males are working during the harvesting period. In non-traditional wet rice cultivation, farmers are using a tool called *sabit* or *arit* to cut off the last fifteen centimetres of the plant. A consequence of the usage of a sickle is that the people who harvest do not make bundles any longer. In the past, women used to be paid per bundle; therefore, men are primarily doing the harvest in non-traditional wet rice cultivation. Farmers use a basket or *tolok* for the harvested rice branches. The remaining part of the plant will function as a natural fertiliser for the next planting period and therefore it remains in the soil. On average, farmers can produce three up to four tonnes of rice per hectare with non-traditional wet cultivation. When the harvesting is finished, farmers stop irrigating the field, so that weeds can grow and the field can partly recover for a period of one month.

⁴⁸ Consult appendix 10 for a schematic overview of sowing on a traditional and non-traditional *sawah*.

6.4.6 Non-traditional wet rice cultivation – post-harvest processing

The next phase consists of separating the grains from the branches. This takes place after drying, but it is usually done directly after harvest. Women do the separation by hitting the bundles on a large piece of plastic that is lying on the ground. They do this until the grains come loose and the bundles and branches are empty. Drying the grains of rice also happens on a large piece of plastic. Depending on the amount of sunshine hours, the drying process takes about three to seven days.

Farmers who practice non-traditional wet rice cultivation have the choice to thresh the grains by hand or by machine. Choosing for the threshing machine depends on three factors; the availability of diesel and on the time and money that a family wants to spend. In the area of Cisarua, there is one unit of three threshing machines standing next to each other. The first machine filters the grains from small pieces of branches and other organic materials. The second machine threshes the grains roughly and the third machine produces eatable rice. Threshing fifty kilograms of rice takes about thirty minutes with the three machines. The costs for using these machines are Rp. 10,000 (€ 0.83) up to Rp. 12,500 (€ 1.04) per fifty kilograms, depending on the size of the grain.

However, the family can also decide to thresh by hand with a *lisung*, as described in section 6.3.6. In this case, it will take four women approximately three and a half hours of work to produce fifty kilograms of eatable rice. Bags of fifty kilograms are stored in the house of the family of the farmer.

If a farmer owns one hectare of wet rice fields and harvests twice a year, the total harvest per year will be between six and eight tonnes. A family of five persons needs 750 tonnes of rice per year, which implies that five up to seven tonnes of rice can be sold per year. Selling one bag of fifty kilograms of rice means a profit of Rp. 50,000 (€ 4.17) to Rp. 100,000 (€ 8.34), depending on the quality of the rice. From this profit, the costs for hired labour, fertilisers and pesticides, threshing with machines and transportation have to be subtracted.

Selling the rice can take place in the village of Cisarua; in this case, buyers have to make a two-hour trip from sea level to an altitude of 1,000 meters. Transportation of people and rice happens with motorcycles or four-wheel-drives. Another possibility for the farmers is to go downwards and sell the rice on the market of the town of Pelabuhanratu. However, the costs for a truck that can carry twenty bags of fifty kilograms is Rp. 100,000 and most farmers cannot afford this. The small stony tracks are very dangerous to drive on, so only a few experienced drivers are able to do the transportation. In the rainy season, the tracks can be flooded so that transportation is impossible. Moreover, once the bags of rice have arrived in Pelabuhanratu, there is no guarantee that they all bags will be sold. In short, there are quite some uncertainties in relation to transportation for those farmers who practise non-traditional wet rice cultivation. The consequence of these transportation problems for many farmers is a surplus of rice and a sometimes even a lack of income.

6.4.7 Overview of the characteristics of non-traditional wet rice cultivation

After the harvesting period, farmers do not cultivate the fields for one month. Continuing, the cycle starts again. We can conclude that non-traditional rice-farmers cultivate their fields twice a year. This system is organic for approximately ten percent, for the other ninety percent farmers use fertilisers and pesticides. During the sowing period, women sow with seeds and do not use rice branches. These non-traditional seeds are often high-yielding varieties, meaning that they are crossbred or genetically modified. It is also possible for these farmers to use traditional varieties, as long as these varieties are fast growing and fit into the cycle of two harvests per year. Harvesting happens with a tool called *sabit* or *arit*, which is a sickle that works rather quick. The grains are separated from the branches by hitting the bundles on plastic. Continuing, the grains are dried in the sun on a piece of plastic for three up to seven days. Threshing the grains is possible with machines or with a *lisung*. Producing rice with this system implies higher costs due to the intensive cultivation. These costs consist of labour, fertilisers and pesticides, threshing with machines and transportation. The

non-traditional tools that are used, such as the sickle and the threshing machines, reduces the need of labour. Lastly, the quantities of rice that are produced per hectare are higher, but according to respondents of both the traditional as the non-traditional group, the quality of the rice is generally lower. Rice in this system is a commodity product, but selling the product is a problem due to uncertainties with transportation. This causes a surplus of rice for many families and sometimes a lack of income.

See table 6.3 on the next page for a schematic overview of the characteristics of traditional wet rice cultivation.

Table 6.3: characteristics of non-traditional wet rice cultivation

	General phase	Sub-phase	Details
1	Planning	Timing How Irrigation Ceremonies	Cycle of 2 growing periods of 4 months in 1 year, can start in any month (this example: November) Meeting with official from RT and farmers Communication between farmers and official from RT once, farmers continually maintain dialogue There are no ceremonies
2	Ploughing (<i>membajak</i>)	Timing How Irrigation Ceremonies	In this example ploughing starts in November <i>Kerbaus</i> drag <i>sinkal</i> , then <i>garu</i> . Farmers and hired labourers use <i>garpu</i> , <i>bedog</i> and <i>pacul</i> During the second phase of ploughing, 5 centimetres of water stands on the field There are no ceremonies
3	Sowing (<i>menanam</i>)	Timing How Irrigation Ceremonies	In this example sowing starts in second half of November Seeds in <i>pabinihan</i> , after 1 month moved to other areas. Use of trad. and non-trad. (HYV) varieties During the sowing 5 centimetres of water, when finished the level is raised to 10 centimetres There are no ceremonies
4	Maintenance (<i>merawat</i>)	Timing How Irrigation Ceremonies	In this example: December and January Check condition of crop and irrigation system; add fertilisers and pesticides Perfect level of 10 centimetres of water has to be maintained; water has to flow gently There are no ceremonies
5	Harvesting (<i>di panen</i>)	Timing How Ceremonies	This example: second half of February Mostly men use <i>sabit</i> or <i>arit</i> to cut off the plants. Average per harvest is 3 to 4 tonnes/ha There are no ceremonies
6	Post-harvest processing	Timing How Ceremonies	This example: second half of February and March Drying on plastic in the sun, threshing with machines or <i>lisung</i> , storage in house of the family. Quality of rice is lower than traditional varieties. Selling often a problem due to transportation limits There are no ceremonies

6.5 Comparison of both systems

In the sections above, we have been analysing the characteristics of traditional and non-traditional wet rice cultivation in the southern area of Gunung Halimun, West-Java. We are now able to compare both systems and describe what the differences and similarities are between them. The six phases of the cultivation cycle are used to do this analysis in a structured manner.

The first phase consists of the planning for the new planting period. In the traditional system of the *Kasepuhan* this always starts in November. Within the non-traditional system, a new planting period can start any time of the year. Moreover, the *Kasepuhan* farmers cultivate their *sawahs* once a year for five months; the non-*Kasepuhan* farmers cultivate their fields twice a year and each period lasts for four months with a pause of one month. In the traditional system, the overall leader, the leaders of the village and the RT decide on timing of irrigation. The traditional leader also determines which rice varieties the *Kasepuhan* farmers have to use. In case of non-traditional cultivation, the RT decides together with the farmers on irrigation matters. *Kasepuhan* farmers do not have to make important choices considering rice varieties and timing of irrigation; the traditional leaders do this for them. Non-traditional farmers cannot use this knowledge and have to make these decisions by themselves. A similarity between both systems is that farmers are communicating on irrigation issues throughout the process.

The second phase is ploughing. Both systems are exactly similar to each other in this phase: when possible *kerbaus* are doing most of the ploughing. Farmers of both systems use the same tools and have the same way of working.

Sowing is the third phase. The *Kasepuhan* use branches with grains for this in their traditional system, but the non-*Kasepuhan* farmers use seeds for sowing. In both cases, this task is reserved for women. In the traditional system, only traditional local rice varieties can be planted. Farmers of the non-traditional system can use both traditional as non-traditional varieties. Most farmers of this system are eager to use traditional varieties because their quality is considered higher. The problem is that these varieties grow rather slow, while the non-traditional system demands fast growing varieties because of the shorter planting cycle. High-yielding varieties (HYVs) are also used; the grain is generally larger and thus the yield higher, but the quality is lower. Another difference is carrying out ceremonies. In the traditional system, farmers have a ceremony before sowing called *tebar*. They do this to bless rice goddess *Dewi Sri* and to reinforce their cosmic view. The *Kasepuhan* also carry out ceremonies for the protection of crops and a good cooperation, called *syukuran*. In the sowing period this happens on village level and on central level.

The fourth phase is maintenance. Similarities between the systems lie in the fact that the condition of the crop and the condition of the irrigation system has to be checked regularly. For this, a continual dialogue between farmers of the same irrigation system is necessary. Differences are the usage of fertilisers and pesticides. In the traditional system, this is forbidden, although there are a few exceptions. In short, this system is organic and only natural fertilisers such as weed can be used. The *Kasepuhan* have their own way of protecting their crops, because each month they carry out a ceremony for this.

Fifth, there is the phase of harvesting. Again, the traditional leaders decide when *Kasepuhan* farmers can start harvesting. In the non-traditional system, farmers can decide for themselves when to do this. The plants of the traditional system are thinner and longer compared to the plants of the non-traditional system. Furthermore, the plants of the traditional system take about five months before they are ready for harvest. In case of the non-traditional system this takes three up to four months. In both systems, women and men do the harvesting. A very important difference is the tool used for cutting off the plants. *Kasepuhan* farmers have the obligation of using an *etem*. Non-traditional farmers will use a sickle, because this works many times faster than an *etem*⁴⁹. The average harvest is two tonnes per hectare in the traditional system and three up to four tonnes per hectare in the non-traditional system. We can explain this higher yield due to the fact that the grains of

⁴⁹ See appendix 7a and 7b for an overview of traditional and non-traditional tools.

non-traditional rice varieties are bigger and the fact that there are two harvests instead of one. As said above, the quality of traditional rice varieties is generally higher than non-traditional rice varieties.

The last phase is post-harvest processing. The *Kasepuhan* dry the bundles of branches in a frame with several layers. After drying, they store the bundles in the traditional hut called *leuit*. Non-*Kasepuhan* farmers separate the grains from the branches before drying; the drying itself happens in the sun on a piece of plastic. Within the traditional system, it is an obligation to use a *lisung* or hollow tree trunk to thresh the grains. Farmers of the non-traditional system can also use the *lisung*, but if they have the money to speed up the process, they will use threshing machines. Lastly, the *Kasepuhan* cannot sell a possible surplus; the production is only for self-sufficiency. Those people who are non-*Kasepuhan* can use a part of the harvest for their consumption and sell the other part. However, many non-traditional farmers face severe problems with selling their rice. This is because they live quite remote from the nearest town with a market. The small stony tracks are not suitable for every truck and car, so transportation is difficult and costly. The consequence is a surplus of unsold rice and sometimes a lack of income.

See table 6.4 on the next page for a comparison of traditional and non-traditional wet rice cultivation.

Table 6. 4: comparison of traditional and non-traditional wet rice cultivation

	General phase	Traditional wet rice cultivation	Non-traditional wet rice cultivation
1	Planning	One harvest of five months per year Meeting between highest leader and village leaders. Then between village leaders, RT and farmers	Two harvests of four months per year RT and farmers organise meeting
2	Ploughing	Buffalos and/or hired labour do the ploughing	Buffalos and/or hired labour do the ploughing
3	Sowing	Only traditional rice varieties Branches with seeds are used Ceremonies: <i>tebar</i> and <i>syukuran</i> (small and large)	Traditional rice varieties and high-yielding varieties Seeds are used No ceremonies
4	Maintenance	No chemical fertilisers and pesticides are used Check condition of crop and irrigation system Ceremony: <i>syukuran</i> on village level	Chemical fertilisers and pesticides are used Check condition of crop and irrigation system No ceremonies
5	Harvesting	Women and men use <i>etem</i> to cut off the plants Average harvest 2 tons/ha (2 tons/ha per year) Ceremonies: <i>syukuran</i> (small and large)	Mostly men use a sickle to cut off the plants Average harvest 3 to 4 tons/ha (6 to 8 tons/ha per year) No ceremonies
6	Post-harvest processing	Threshing in hollow tree trunk Storage of bundles in traditional hut Quality of rice is higher Rice for self-sufficiency Ceremonies: <i>Seren Taun</i> in August	Threshing in hollow tree trunk or with machines Storage of threshed rice in house of farmer Quality of rice is lower Rice for self-sufficiency and as a commodity product Transportation of the rice is problematic and expensive No ceremonies

6.6 Conclusions

In this chapter, we analysed traditional wet rice cultivation of *Kasepuhan* farmers and non-traditional wet rice cultivation of non-*Kasepuhan* farmers. The main goal was to describe the characteristics of both systems and to make clear what the differences and similarities are.

Traditional wet rice cultivation of the *Kasepuhan* can be characterised as follows. There is only one harvest per year. This is only for consumption and not for sale. Traditional leaders take the most important decisions considering the timing of irrigation, ploughing, sowing and harvesting. The highest traditional leader called Abah Anom has a decisive influence in this process. Sowing happens by laying rice branches on the soil; farmers cannot use chemical fertilisers and pesticides; harvesting is done with a traditional cutting tool; drying bundles happens on a frame with layers; storing the bundles takes place in a traditional hut and threshing must be done in a *lisung* or hollow tree trunk. On average, there is a yield of two tonnes of high quality rice per hectare. Throughout the year, there are ceremonies on different levels, such as *tebar* before sowing, *syukuran* for the protection of crops and *Seren Taun* as a harvest and thanksgiving festival.

Non-traditional wet rice cultivation practised by non-*Kasepuhan* farmers has other characteristics. There are two harvests per year, partly for consumption and partly as a commodity product. The family takes most decisions independent from others, except on irrigation matters. Sowing takes place with seeds or grains; farmers speed up the growing process with chemical fertilisers and eliminate mice and rats with pesticides. Harvesting is done with a sickle; drying happens on plastic in the sun after separating the grains from the branches. Threshing the rice can be done with a *lisung* or with machines. On average, there is a yield of three to four tonnes of rice per hectare, of a lower quality. Lastly, selling the rice can be a problem due to transportation problems caused by remoteness, poor infrastructure and high costs.

Remarkable but true, many farmers of the non-traditional group have trouble in sustaining a living. They are under pressure to sell the surplus of rice because they made investments in the cultivation process. Rice is a commodity product in the non-traditional system, which creates a form of market competition between farmers. At the same time, they need to cooperate in relation to hiring labour and managing the irrigation systems. This is in contrast with the traditional system of the *Kasepuhan*, where there is less competition between farmers because selling rice is a taboo. Nevertheless, competition can also exist of social status, relating to the number of hectares of rice fields and the amount of harvested tons of rice.

Non-traditional farmers are active with cultivating their *sawahs* year round. This means that the fields have less time to recover compared to the traditional system. Furthermore, there is no time for non-traditional farmers to use their *sawahs* for fish breeding or for a kitchen garden, which is in contrast with *Kasepuhan* farmers that have a multifunctional *sawah* system. This implies that the products from the traditional field are more diverse than that of a non-traditional field.

Thus, the commodity or non-traditional system does not seem to provide a lot of economic welfare. On the other hand, the traditional system does not imply economic welfare either. The traditional system of the *Kasepuhan* provides no money, but it does provide certainty or social welfare. If anything goes wrong for a *Kasepuhan* family – for example a failed harvest – it can always trust on help of the traditional village leader or the overall traditional leader. As bapak Radi stated during one of the interviews in Ciptagelar:

“Participating with the *Kasepuhan* traditions and the traditional leader is important because it makes life possible. If you are not willing to participate, it means you have to leave the community. But then it is far more difficult to take care of yourself and your family.”

In the past, Abah Anom also used to help non-*Kasepuhan* families, for example from the village of Cisarua. For reasons that are not clear, he does not help these families anymore. Nevertheless, he still allows them to use the high quality traditional rice varieties in a non-

traditional system. The *Kasepuhan* exchange bundles of branches of traditional varieties for goods or services and sometimes for a small amount of money.

We can conclude that non-traditional farmers do profit from the fact that the people of the *Kasepuhan* are in the vicinity. It seems that the traditional system has withstood modernisation influences from the non-traditional system. The only innovation in the traditional system is the introduction of some small concrete irrigation systems in the late 1990s through which higher areas can be irrigated. These systems are connected to hydro turbines that generate electricity. It remains unclear why traditional leaders accepted these innovations, because they are not in line with the ancestors' way of life. However, the concrete irrigation systems did not influence the traditional cultivation process itself. This might be the reason that traditional leaders did allow the construction of concrete irrigation systems anyway,

It has become clear in this chapter that the traditional system has influenced the non-traditional system. We can explain this because of the fact that the traditional system provides alternatives for the non-traditional system. If there is a shortage of diesel for the threshing machines or a farmer has no money for hiring them, there is always the traditional *lisung*, so that the work can be done anyway. If a non-traditional farmer finds the quality of high-yielding rice varieties too low, he can use the high quality traditional varieties. However, they do not have a solid social system in case of a failed harvest, like the *Kasepuhan* have.

Indeed, being *Kasepuhan* might imply 'economic poverty' but at the same time, the members of the community can rely on a solid social system when things go wrong. Again, bapak Radi illustrated this:

"Being *Kasepuhan* makes people confident in life. Members of the community are faithful to Abah Anom. In return they receive certainty to sustain a living. It is also about responsibility; members feel responsible for Abah Anom, and Abah Anom feels responsible for his people. Together they try to find balance and happiness in their lives and to be a good and helpful person."

Chapter seven

Conclusions

In this chapter we will combine the theoretical and methodological issues with the research data from the field, in order to answer the research questions.

Throughout this thesis, we have been focusing on the question of how to explain the differences between rural communities in Indonesia in relation to the integration of modernisation trends of the utilisation and management of wet rice cultivation. In order to collect field data, a research has been carried out in the southern area of Gunung Halimun, West-Java. Two wet rice systems are part of the analysis; the traditional system of the people of the *Kasepuhan* and the non-traditional system practised by non-*Kasepuhan* farmers.

We are firstly going to review the relevant aspects of each of the preceding chapters. Then we will discuss the research questions, followed by the final conclusions.

7.1 *Reviewing the preceding chapters*

After introducing this thesis in the first chapter, we explored the developments of Indonesia's wet rice cultivation. Literature made clear that there is archaeological evidence that wet rice cultivation is practised in Indonesia for more than one thousand years. In the course of centuries, simple irrigation systems were developed and managed on a small and local scale. In the contemporary situation, Indonesia is the world's third largest producer of rice. Average production per hectare has increased significantly, just as the total amount of irrigated hectares.

Historical developments can explain the increase in production and the amount of irrigated hectares. During the beginning of the 20th century, many community based irrigation systems were replaced by large-scale irrigation systems by the Dutch colonial government. In relation to trade interests, rice production per hectare and the total area of irrigated land had to increase, so that the national rice production would rise. However, this policy did not have a large impact until the Green Revolution started in the late 1960s. New high-yielding rice varieties, fertilisers and pesticides were introduced. The combination of new technologies with the somewhat old-fashioned public irrigation systems of the Dutch and the new irrigation systems of the 1970s, made it possible to significantly increase the Indonesian rice production.

In the third chapter we constructed a theoretical framework, by introducing a number of key concepts. They assist in understanding why traditional rural communities in Indonesia do not always adopt modernisation trends in wet rice cultivation. Prior to the research questions, two hypotheses have been guiding to explain this. First, it might be possible that some rural communities in Indonesia do not want to modernise their rice system because rice production directly relates to their identity. Second, the form of traditional authority of a rural community might make the integration of modernisation influences less accessible.

The first group of concepts consists of identity, tradition and *adat*. Identity is a symbolic construction of a coherent totality of specific characteristics of a social group, making this group distinguishable and recognisable from other social groups and attributing a meaning to the customs, habits and behaviour of this social group. Tradition is defined as customs, habits and behaviour of a specific social group that have been passed down from generation to generation, for the survival of the same customs, habits and behaviour, and the survival of the identity of this social group in general. *Adat* stands for a set of sacred rules, which are to be maintained. The three concepts together form the basis of the other concepts which are described below.

The next concept explains the vision that many small rural societies in Indonesia have of the universe. We call this cosmivision, a holistic view of the universe in which

everything relates with everything. According to this view it is of utmost importance to maintain the harmonious balance in the universe. Myths and rituals assist in expressing and reinforcing cosmivision. In this respect, rice goddess *Dewi Sri* plays a central role in many ceremonies around rice cultivation, because she represents the fertility of the earth and the good fortune of the human community.

Lastly, we concentrated on the concept of traditional authority and its acceptance or legitimacy. Traditional authority is the physical and extra-physical power of one or more persons which is accepted by the members of a traditional rural community, through which the actions of the members are placed or maintained in a condition of order. Literature made clear that a traditional leader is expected to uphold the established order and to be reserved with introducing any innovations because he is responsible for the harmony and balance in the community. Legitimacy is 'the justification of authority', and assists in explaining why traditional authority is accepted.

We can conclude that traditional authority is based on power, the basis or legitimacy of this power is based on *adat*, and *adat* is based on rules that are laid down by the ancestors. In the last paragraph of this chapter, we will consider the practical implications of this set of concepts on traditional wet rice cultivation.

The fourth chapter consists of the methods and techniques of the research. We marked out the statement of the research problem more precisely. The research focuses on the way in which modernisation trends influence wet rice cultivation in Indonesia. There are still traditional rural communities in Indonesia that cultivate and manage *sawahs* in a traditional manner. The question is why modernisation trends did not influence these traditional systems, in contrast to other wet rice systems in Indonesia. In order to find the reasons behind different stages of development within the modernisation of wet rice cultivation in Indonesia, the traditional wet rice system of the *Kasepuhan* is compared with the non-traditional system of non-*Kasepuhan* farmers in the same area of Gunung Halimun, West-Java. Consequently, the main research question is defined as:

How to explain the differences between rural communities in Indonesia in relation to the integration of modernisation trends of the utilisation and management of wet rice cultivation?

We analysed the community of the *Kasepuhan* in chapter five. Their way of living consists among others of a unique mixture of animism, Hindu, Sunda and Islam traditions. However, this social group is not living isolated from the rest of Java and Indonesia. Although we can regard their society as 'traditional', modernisation influences do have an impact.

Traditional leaders of the *Kasepuhan* allow the members of the community to modernise their way of life, as long as they do not break with their traditions. These traditions consist of three main categories, which are housing, customs, habits and behaviour and of agriculture. A member of the *Kasepuhan* is obligated to live in a traditional house, follow the sacred rules of *adat*, participate in traditional ceremonies, and maintain traditional wet rice cultivation and the agricultural customs in general.

Thus, modernisation trends do have an impact on the society of the *Kasepuhan*, but the traditional way of cultivating *sawahs* still exists. Just as they did centuries ago, the *Kasepuhan* still only have one harvest a year, use traditional tools for cultivation and do not use chemical fertilisers and pesticides. Over the past centuries, their way of life has been changing repeatedly, but their material and spiritual connection to the *sawahs* and rice has stayed the same. Rice is the ultimate core of the identity of the *Kasepuhan*. It was the key feature of the life of their ancestors; and being *Kasepuhan* implies living the ancestors' way of life.

In chapter six, we concentrated on traditional wet rice cultivation of *Kasepuhan* farmers and non-traditional wet rice cultivation of non-*Kasepuhan* farmers. Traditional wet rice cultivation of the *Kasepuhan* can be characterised as follows. There is only one harvest per year. This is only for consumption and not for sale. Traditional leaders take the most important

decisions considering the timing of irrigation, ploughing, sowing and harvesting. The highest traditional leader has a decisive influence in this process. Sowing happens by laying rice branches on the soil; farmers cannot use chemical fertilisers and pesticides; harvesting is done with a traditional cutting tool; drying bundles happens on a frame with layers; storing the bundles takes place in a traditional hut and threshing must be done in a *lisung* or hollow tree trunk. On average, there is a yield of two tonnes of high quality rice per hectare. Throughout the year, there are ceremonies on different levels, such as *tebar* before sowing, *syukuran* for the protection of crops and *Seren Taun* as a harvest and thanksgiving festival.

Non-traditional wet rice cultivation practised by non-*Kasepuhan* farmers has quite some other characteristics. There are two harvests per year, partly for consumption and partly as a commodity product. The family takes most decisions independent from others, except from irrigation matters. Sowing takes place with seeds or grains; farmers speed up the growing process with chemical fertilisers and eliminate mice and rats with pesticides. Harvesting is done with a sickle; drying happens on plastic in the sun after separating the grains from the branches. Threshing the rice can be done with a *lisung* or with machines. On average, there is a yield of three to four tonnes of rice per hectare, of a lower quality. Lastly, selling the rice can be a problem due to transportation problems caused by remoteness, poor infrastructure and high costs.

Many farmers of the non-traditional group have trouble in sustaining a living. On one hand, they have to make investments to be able to maintain a cultivation cycle of two harvests per year. On the other hand, they do not earn back these investments per se, because selling the surplus of rice is problematic. This combination causes pressure on farmers who practice non-traditional rice cultivation in the area of Cisarua. The fact that these farmers have to sell a considerable part of the harvest creates a form of market competition between them; at the same time, they are mutual dependant on each other considering labour and irrigation. In case of the *Kasepuhan*, there is no economical competition, causing a well functioning cooperation between the farmers.

For farmers of the non-traditional system, there is more uncertainty in order to generate an income. In other words, it does not provide economic certainty per se. This is also applicable to traditional rice cultivation; nevertheless, this system does guarantee social welfare. Because *Kasepuhan* farmers have to pay a small tax in the form of agricultural products, they can also rely on the highest traditional leader and the village leaders when they are in trouble.

It seems right to conclude that there are advantages for non-traditional farmers due to the fact that the *Kasepuhan* live close to them. The traditional system offers alternatives for the non-traditional system. A hollow tree trunk can be used for threshing when machines are broken and farmers can choose between traditional rice varieties or high-yielding varieties.

7.2 Answering the research questions

By now, we can make the step towards answering the research questions. We will discuss the sub questions first and end with the main research question.

The first sub question concentrates on how the identity of a traditional rural community is linked to the traditional manner in which wet rice is cultivated. We can explain this by looking at the name of the *Kasepuhan*, which means 'living the ancestors' way of life'. Cultivating rice in a traditional way is how the ancestors lived and thus it implies that the *Kasepuhan* of today have to maintain this. Living the ancestors' way of life also means complying with the most important condition of cosmovision, which is to maintain the balance and harmony in the universe. Traditional wet rice cultivation is the most important way for the *Kasepuhan* to give meaning to the symbolic construction of cosmovision. Thus, cultivating rice in a traditional manner is the cornerstone of cosmovision, and therefore it is also the cornerstone of the identity of the *Kasepuhan*.

The second sub question considers the impact that the identity of a traditional rural community has considering the integration of modernisation trends in wet rice cultivation. The *Kasepuhan* maintain and reinforce their identity through traditional rice cultivation, because it is the ultimate way to express their holistic view of the universe. To include innovations in wet rice cultivation means disturbing the balance and harmony in the universe. They believe that this will cause disaster, and the worst-case scenario is a failed harvest.

The third sub question focuses on the impact of traditional authority considering the integration of modernisation trends in wet rice cultivation. In chapter three, it became clear that a traditional leader must be reserved with introducing innovations because one of his most important responsibilities is maintaining harmony and balance in the community, as a reflection of cosmovision. Because the ancestors choose their leader, the people of the *Kasepuhan* accept his leadership and power in an unlimited way.

The fourth sub question is about the features of a traditional wet rice system. Chapter six made clear that the traditional system of the *Kasepuhan* characterises itself by one harvest per year and selling rice is an absolute taboo. Traditional leaders do have a decisive influence on decision-making processes such as the timing of ploughing, irrigation, sowing and harvesting. Sowing happens with rice branches and using chemical fertilisers and pesticides is not possible. Harvesting must be done with a specific traditional tool and threshing takes place in a hollow tree trunk. Per harvest, there is an average yield of two tonnes of high quality rice per hectare. Numerous ceremonies take place throughout the year such as *tebar* before sowing, *syukuran* for the protection of crops and *Seren Taun* as a harvest and thanksgiving festival.

The fifth sub question considers if the traditional system has been subject to modernisation influences. Based on the field data, we can conclude that the system has not been influenced by any innovations. The only exception is the introduction of concrete irrigation systems in the 1990s by development programs of international organisations. It is likely that the *Kasepuhan* can cultivate higher and more areas due to these new systems. The question arises why the traditional leaders have accepted these projects to be executed. One could even argue that it is an innovation, which is not in line with 'the ancestors' way of life'. Moreover, these irrigation systems also provide water for hydro turbines that generate electricity, which is also an innovation. The answer might be that these projects did not influence the characteristics of traditional wet rice cultivation as described above. In this sense, this innovation is not in conflict with the ancestors' way of life and consequently, the universe is still in harmony and in balance.

The sixth sub question deals with the features of a non-traditional wet rice system cultivated by non-*Kasepuhan* farmers. There are two harvests per year, for consumption and as a commodity product. Only irrigation is a matter of collective decision-making. Sowing takes place with seeds from high-yielding varieties or traditional varieties; chemical fertilisers and pesticides are added to the field and harvest is done with a sickle. Threshing can be done in a hollow tree trunk or with machines. Per harvest, there is an average yield of three to four tons per hectare, of a lower quality of rice. A crucial problem is selling the rice, which is hard due to transportation problems caused by remoteness, poor infrastructure, and high costs. Consequently, the investments made cannot always be earned back.

The seventh sub question is about if and how the non-traditional system has been subject to modernisation influences. The sixth sub question made clear that the innovations within this system are: the utilisation of high-yielding varieties; concrete irrigation systems; chemical fertilisers and pesticides; the sickle for harvest; and machines for threshing rice. We can explain the influence of modernisation trends by the fact that farmers of the non-traditional system do not have to maintain an identity that directly relates to traditional wet rice cultivation. Furthermore, there are no influential traditional leaders that maintain and reinforce this identity. Thus, modernisation influences from outside can integrate easier in the non-traditional system because farmers are more open towards such developments.

The eight sub question focuses on the similarities and the differences between traditional systems and non-traditional systems. Similarities can be found in the process of ploughing; both systems are exactly the same here. Another resemblance is the utilisation of a hollow tree trunk for threshing the rice. The difference is that using a *lisung* is an obligation for the *Kasepuhan* and an option for non-*Kasepuhan* farmers. In both systems farmers can use local, traditional rice varieties. Again, *Kasepuhan* farmers have to use these varieties, for non-*Kasepuhan* farmers this is an option. The most obvious differences between both systems lie with quantity and quality of the rice. The traditional system produces an average of two tons per hectare (two tons per year), the non-traditional system produces three to four tons per harvest (six to eight tons per year). There is also a difference in quality; according to all respondents, traditional varieties taste much better than non-traditional varieties. Rice for the *Kasepuhan* is only for consumption and self-sufficiency, but for non-*Kasepuhan* farmers rice is also a commodity product that has to be sold. During the phase of sowing, *Kasepuhan* women use branches, while non-*Kasepuhan* women use seeds. Other differences are the application of fertilisers and pesticides, which is a taboo for the *Kasepuhan* farmers and a necessity for non-*Kasepuhan* farmers. Interesting is the difference in tools used for harvest. The *Kasepuhan* have to use an *etem* that works relatively slow, non-*Kasepuhan* farmers can use a sickle that works faster. During post-harvest processing, the *Kasepuhan* use a frame for drying bundles, while non-*Kasepuhan* separate the grains first and then dry them on the ground. The *Kasepuhan* have a special traditional hut for storing the dry bundles, but non-*Kasepuhan* families store threshed rice in their own houses. Considering threshing, non-*Kasepuhan* farmers can use machines; again, this is a taboo for *Kasepuhan* farmers.

The ninth sub question concentrates on the influences that both systems have on each other. No evidence was found that the non-traditional system influences the traditional system. However, there are two aspects where the traditional system influences the non-traditional system. First, this is in using traditional rice varieties. Farmers of the non-traditional system are enthusiastic about these varieties, because the quality is higher and they are better adapted to local ecological circumstances. The disadvantage for them is that the grains are smaller and therefore the harvest is smaller too. Moreover, many traditional varieties do not fit into a planting cycle of two harvests per year. The second influence from the traditional system is the hollow tree trunk or *lisung*. This is interesting for non-traditional farmers in certain occasions. For example when there is no diesel available for the machines, when the machines are broken, or when a farmer does not have the money to pay for the costs for using the machines.

The last sub question deals with the migration of people between both wet rice systems. It is possible for farmers of a non-traditional system to join the *Kasepuhan*. However, it implies that the farmer and his family have to comply with the traditional rules, characterised foremost by traditional wet rice cultivation. This form of migration does not take place on a regular basis. The only exception is when the traditional leader decided to establish the village of Ciptarasa in 1984. At that time, tens of non-*Kasepuhan* farmers and their families joined Abah Anom and adapted to traditional wet rice cultivation and all the other *Kasepuhan* traditions. If a member of the *Kasepuhan* does not comply with the rules of the traditions, this person has to leave the community. This happens for example with marriages between *Kasepuhan* and non-*Kasepuhan*. The migration from traditional to non-traditional wet rice cultivation is also quite rare.

Now the sub questions are answered we can focus on the main research question of this thesis. The differences between rural communities in Indonesia in relation to the integration of modernisation trends of the utilisation and management of wet rice cultivation can be explained as follows.

Members of the *Kasepuhan* keep on practising traditional wet rice cultivation due to five reasons. First of all, they are proud of 'being part of a traditional group'. This relates directly to their identity, and traditional wet rice cultivation is the ultimate way of distinguishing themselves from other rural areas around Gunung Halimun. Being *Kasepuhan* means

literally 'living the ancestors' way of life'; traditional wet rice cultivation was the most important feature of their way of living.

The second reason is that practising wet rice cultivation is the most important way of expressing their view of the universe, called cosmovision. The central theme of cosmovision is to maintain the balance and harmony in the universe; disturbance implies a disaster. Traditional wet rice cultivation is part of this balance and harmony; innovations can disturb this and might cause a failed harvest. Before, during and after the cultivation process, numerous ceremonies assist in expressing and reinforcing this view but also their identity.

Third, the overall leader of the *Kasepuhan* has the responsibility to uphold the features of cosmovision; in other words, he has to maintain the balance and harmony in the community. The leader has to be reserved with allowing innovations to integrate in wet rice cultivation, because they can disturb the balance and harmony of the community. The members of the *Kasepuhan* accept their leader and his power in an unlimited way because the ancestors choose him.

The fourth reason is social security that is imbedded into the *Kasepuhan* society. The members of the community can rely on their traditional leaders for the cultivation of their *sawahs*. These leaders have full knowledge of traditional wet rice cultivation and agriculture in general. Moreover, they are able to communicate with the ancestors to get their blessings and to get advice. If anything goes wrong, for example a failed harvest, members of the *Kasepuhan* can rely on food donations of the leaders.

The last reason of why the *Kasepuhan* keep on practising traditional wet rice cultivation is because the non-traditional wet rice system that lies in the vicinity, does not seem to provide economic certainty. Non-*Kasepuhan* farmers have trouble with selling their rice because the area in which they live is very remote. In combination with a poor infrastructure, the transportation costs become very high. Occasionally, the investments that farmers make in the cultivation process are even higher than the profits. When a non-traditional family is in trouble, they cannot rely on food donations such as the *Kasepuhan* can. Thus, there are important advantages to be *Kasepuhan* and cultivate rice in a traditional manner, compared to the non-*Kasepuhan* that practice non-traditional wet rice cultivation.

7.3 Final conclusions

It is unavoidable to conclude that modernisation trends do influence the community of the *Kasepuhan*. An example is the introduction of hydro electricity, through which an increasing number of people has a radio or even a television. Nevertheless, the traditional manner of cultivating wet rice fields has withstood these modernisation influences. Like their ancestors, the *Kasepuhan* only harvest once a year and the yield is for self-sufficiency. Farmers use natural fertilisers, chemical fertilisers and pesticides are a taboo. In some phases of the cultivation process, they use specific traditional tools. In short, the *Kasepuhan* way of life changes, but the material and spiritual connection between the people and the *sawahs* and rice has stayed the same.

Rice is the ultimate core of the identity of the *Kasepuhan*, because it expresses their view of the universe called cosmovision. This implies a holistic approach of the material and immaterial world in which everything relates to everything. The cultivation process and the ceremonies that are related to it make them distinguishable and recognisable from other rural communities in the region. Traditional wet rice cultivation is the key feature of the life of their ancestors; and being *Kasepuhan* implies living the ancestors' way of life.

Traditional authority is based on physical and extra-physical power and according to the traditional and sacred rules of *adat*, this power has been granted by the ancestors. Therefore, the legitimacy or acceptance of the power of traditional leaders is an indisputable fact for the members of the *Kasepuhan* community. These traditional rules also relate to the view of cosmovision, implying that traditional leaders have an important responsibility to maintain the balance and harmony in the universe and in the community. Introducing innovations in traditional wet rice cultivation might disturb the goodwill of the ancestors,

through which the balance in the community is affected. In the perception of the *Kasepuhan*, the consequence might be a disaster such as a failed harvest.

The traditional way of life of the *Kasepuhan* offers social security in an area where economic certainty is hard to achieve. A *Kasepuhan* farmer can rely on the agricultural knowledge of the traditional leaders; these leaders rely on the blessings and advice of the ancestors. In case of trouble such as a failed harvest, members of the *Kasepuhan* can rely on food donations of the leaders. Farmers of the non-traditional system in the same area cannot rely on these benefits; moreover, earning money with selling rice is problematic due to remoteness and consequently high transportation costs.

Several organisations have tried to modernise the traditional cultivation system of the *Kasepuhan*. The reasons for trying to modernise the system is that the *Kasepuhan* look poor from the outside and that they need economic development. However, these organisations forget to ask the question *why* the *Kasepuhan* still cultivate their *sawahs* in a traditional way. Therefore, these organisations are wasting their time, energy and money by trying to modernise the traditional system. It might even imply a lack of respect towards the way in which the *Kasepuhan* live. Indeed, the fact that the *Kasepuhan* still practise traditional wet rice cultivation is not a coincidence; it is a well over thought and rationalistic choice.

Epilogue

In this final part of the thesis, I would like to give a personal reflection on the experience of the five months that I spent in Indonesia. I will shortly discuss on the lessons I have learned, the things that went well and the things that have to be done better next time. I will also review some problems that I experienced while being 'in the field'. Note that the first part of this epilogue consists of personal oriented lessons and the second part of educational oriented lessons.

First of all, I must confess that my passion is not really focused on doing anthropological research. However, I am convinced that one should be open minded, not only in thinking, but also in acting. Going to Indonesia was the first time for me to go to a developing country. Quite soon, when I arrived in Jakarta, I was confronted with a totally different culture. Moreover, the differences between 'the poor' and 'the rich' people are overwhelming. I will never forget this one man, lying literally in the gutter with hardly any clothes on his body. To be quite honest, I was wondering if this man was still alive. But seeing other people's misery is undoubtedly a fact with which you have to deal with in Indonesia every now and then.

Staying with the people of the *Kasepuhan* also confronted me almost each day with the differences between rich and poor. Numerous times people remembered me: 'you are rich and we are poor'. In the beginning, this is quite hard to hear. A number of times I tried to explain that the term 'poorness' can be seen as quite a relative concept. When I told them that there are also poor people in the Netherlands – according to our Western standards – they just would not believe me. In addition, when I told them that poor people in the Netherlands would be rich in Indonesia, they just stared at me without understanding anything of what I said.

Naturally there were other difficulties while being in Indonesia. One of the obstacles was language, especially in the beginning. During my preparations for the research in the Netherlands, I followed only a minor course in *Bahasa Indonesia*. When I arrived, it appeared that I was not able at all to have a descent conversation, let alone a professional interview. Luckily, the basics of the Indonesian language on the streets are not that hard, so in the end I managed to deal with this problem. In West-Java however, the first language is *Bahasa Sunda*, which is totally different from *Bahasa Indonesia*, the second language. Therefore, considering the language, living with the *Kasepuhan* was quite hard in the beginning.

Another thing I found hard in the beginning was the lack of privacy. It made me realise that I was very much used to privacy, without really knowing it. Apparently, we can afford a quite individual way of life in the Netherlands. We can simply choose whether we want company or not. In Indonesia, this is not possible at all, probably because people are in many ways dependent on each other to make a living. Together with the funny habit of Indonesian people to be curious, this made it sometimes hard to work out field notes, while children and even adolescents continuously grabbed away my writing pad to have a look at it, even though they could not understand the writing.

Considering the research, I realised that having a notebook computer is very handy, in order to find back information easily, and to save time writing my report. On the other hand, electricity was only scarcely available where I lived. But it would have been handy to work out the field notes in the city, every two weeks or so.

Considering interviewing, I realised only afterwards that the interviews that were supposed to be semi-structured, were often unstructured. With the processing of the gathered information this caused some trouble because it was sometimes not possible to compare interviews. This has undoubtedly led to a decrease of validity of the research. Next time, I have to pay more attention to this, while spending my time in the field.

Nevertheless, I also found out a strategy to check some information provided by the *Kasepuhan*. Every two weeks, I went back to a town at sea level, called Pelabuhanratu.

Each time I selected some information that I was not totally sure about. This absolutely lead to new insights in the life of the *Kasepuhan*. In this manner, I was able to discover the real face behind the mask of the *Kasepuhan*. To be more precise, without this strategy I would not have been possible to conclude that the *Kasepuhan* are in fact more Hindu than Islam. In this case, the mask is Islam, and the face is Hindu.

Naturally, this is only a short summary of everything I learned. It is assumable that one does not always notice the lessons learned and the experience gained, until the first time that circumstances demand that they are used again. Only in those new situations, it becomes clear that those lessons and such experience from the past are truly priceless.

Wageningen, October 2006

Bas Bolman

Glossary

In the Indonesian and Sunda language

Abah	-	Father
Adat	-	A set of sacred rules, laid down by the ancestors
Agem	-	Handful of rice-stalks
Ani ani	-	Traditional reaping knife used for harvesting rice
Arit	-	Non-traditional tool for cutting <i>paddy</i> during harvest
Baduj	-	Traditional community living in West-Java
Bahasa Indonesia	-	National language of Indonesia
Bahasa Sunda	-	Sundanese language spoken in West-Java
Bahasa	-	Language
Baruang beurit	-	Pesticide for protection against mice and rats
Bedog	-	Large knife for multiple purposes
Bengkong Sunaat	-	Person responsible for circumcision
Biji pare	-	Seeds of rice, used in non-traditional <i>sawah</i> cultivation
Bubur bumi	-	Ceremony before planting, for high yields
Buntoni	-	Ceremony after the end of planting
Ceblokan	-	Tied labour contracts
Desa	-	Village (with local authority)
Dewi Sri	-	Goddess of rice
Di panen	-	To harvest (rice cultivation process)
Dinas Pert. dan Kehutanan	-	Agency of Agriculture and Forestry
Dinas Pertanian Tan. Pan.	-	Agency of Agriculture, Crops and Food
Dukun Hewan	-	Local expert on issues around agriculture
Dukun Kesehatan	-	Medicine man with paranormal powers
Dukun Paraji	-	Woman assisting in the event of births
Etem	-	Traditional tool for cutting the <i>paddy</i> during harvest
Gabah pare	-	Remaining skins of the rice grains, not for consumption
Galeungan	-	Small dike around a <i>sawah</i>
Garok	-	Tool for levelling the <i>sawah</i> before planting
Garpu	-	Pitchfork
Garu (large)	-	Nine tooth plough dragged by <i>kerbaus</i>
Garu (small)	-	Tool for making grooves in which plants are sowed
Golongan sistem	-	Set of rules in irrigation management
Halu	-	Stick used in combination with a <i>lisung</i> , for threshing
Huut	-	Pulverised rice-grain skins for feeding animals
Ilmu macan	-	Knowledge of the tiger (Padjadjaran)
Ilmu	-	Knowledge (technology, science, magic)
Kabupaten	-	District (as a level of government)
Kampung	-	Small village (rural) / neighbourhood (city)
Karuhun	-	Ancient tribal leader of the <i>Kasepuhan</i>
Kasekten	-	Extra-physical or magical power
Kasepuhan	-	Traditional rural community in West-Java
Kebun komunitas	-	Small kitchen garden used by a village
Kebun	-	Small private kitchen garden
Kecamatan	-	Sub-district (as a level of government)
Kedokan	-	Tied labour contracts
Keleman	-	Ceremony during the ripening period of rice
Kepala Desa	-	Head of a village
Kepala Suku	-	Leader of a traditional social group
Kerbau	-	Buffalo, used for ploughing
Ladang	-	Dry rice cultivation on the slope of a mountain
Lantayan	-	Frame with layers for drying bundles with branches

Leuit	-	Small bamboo hut for the storage of rice
Lisung	-	Tree trunk with holes for threshing bundles of <i>paddy</i>
Membajak	-	To plough (rice cultivation process)
Menanam	-	To sow (rice cultivation process)
Merawat	-	To maintain (rice cultivation process)
Metik	-	Ceremony for the protection of the growing rice
Nasi	-	Rice that has been processed and is ready for cooking
Ngepak-ngedok	-	Tied labour contracts
Nyalametkeun	-	Circumcision ceremony of the <i>Kasepuhan</i>
Nyebar wiji	-	Act to inform Dewi Sri that rice growing is starting
Nyi Sri	-	Goddess of rice
Nyiru	-	Flat bamboo basket, for separating grains from skins
Ojek	-	Taxi by motorcycle in Indonesia
Pabinihan	-	Area on a <i>sawah</i> for <i>paddy</i> during the first month
Pacul	-	(Stone) hoe used for sawah farming
Pacul	-	Spade
Paddy	-	Rice being cultivated on the field
Padjadjaran	-	Hindu kingdom, 14 th until 16 th century
Panghulu	-	Person assisting in event of a funeral
Pantun	-	Instrument used during the ceremony of <i>syukuran</i>
Pare rangeuy	-	Bundles of rice branches
Pasten	-	Rule for the allocation of water
Pecut	-	Whip
Pencar	-	Rice sheaf
Perbakin	-	Person protecting agriculture, flora, fauna
Pocong	-	A bundle of one hundred branches of <i>paddy</i>
Pongokan	-	Ceremony prior to <i>sawah</i> utilisation
Provinsi	-	Province
Pungpuhunan	-	Incense in a tray of straw, part of <i>tebar</i>
Pupuk	-	Chemical fertiliser speeding up the growing process
Rangeuy	-	Rice branch
Rukun Tetangga	-	Voluntary level of authority below <i>desa</i> level
Rukun Warga	-	Voluntary level of authority below <i>desa</i> level
Sabit	-	Non-traditional tool for cutting <i>paddy</i> during harvest
Sabit	-	Sickle (modern tool for wet rice cultivation)
Sawah	-	Wet rice field in Indonesia
Sedekah bumi	-	Thanksgiving ceremony after harvest
Sepuh	-	Old (included in the name <i>Kasepuhan</i>)
Sesepuh Girang	-	Leader of a tribe
Sesepuh Kampung	-	Leader of a village or settlement
Sesepuh	-	Leader
Sinkal	-	Single tooth plough dragged by <i>kerbaus</i>
Subak	-	Irrigation association (modern Balinese)
Syukuran	-	Ceremony for the protection of crops
Tabor benih	-	Cultivation stage of seedling
Tandur kotakan	-	Area on a <i>sawah</i> for the purpose of harvesting
Tatali paranti karuhun	-	The ancestor's way of life (for the <i>Kasepuhan</i>)
Tebar	-	Small ceremony before sowing the <i>sawah</i>
Tolok	-	Basket for <i>paddy</i> , used during harvest period
Tumbu	-	Praying for <i>Dewi Sri</i> during <i>tebar</i>
Tunggul jarami	-	Remaining part of the <i>paddy</i> plant that is not used
Tunggul	-	Weed on a empty <i>sawah</i> used for fertilising purposes
Ulu-ulu	-	Present day institution connected with irrigation
Warung	-	Small shop situated along the street
Wiwit ngluku	-	Beginning of land ploughing

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References of pictures and maps:

Front page: all pictures taken by Bas Bolman, south-side of Ciptarasa, November 2004
Picture of *leuit*: taken by Bas Bolman, south-side of Ciptarasa, November 2004
Picture of traditional custom of *tebar*: taken by Bas Bolman, Ciptarasa, November 2004
Map of Indonesia: derived from www.expedia.com
Map of Java: derived from www.expedia.com
Map of Gunung Halimun: derived from www.expedia.com
Picture of community house: taken by Bas Bolman, Ciptagelar, January 2005
Picture of *sawah* fields: taken by Bas Bolman, near Cisarua, December 2004
Picture of ploughing: taken by Bas Bolman, Ciptarasa, November 2004
Picture of traditional custom of *tebar*: taken by Bas Bolman, Ciptarasa, November 2004
Pictures of tools in appendix: taken by Bas Bolman, Ciptarasa, February 2005

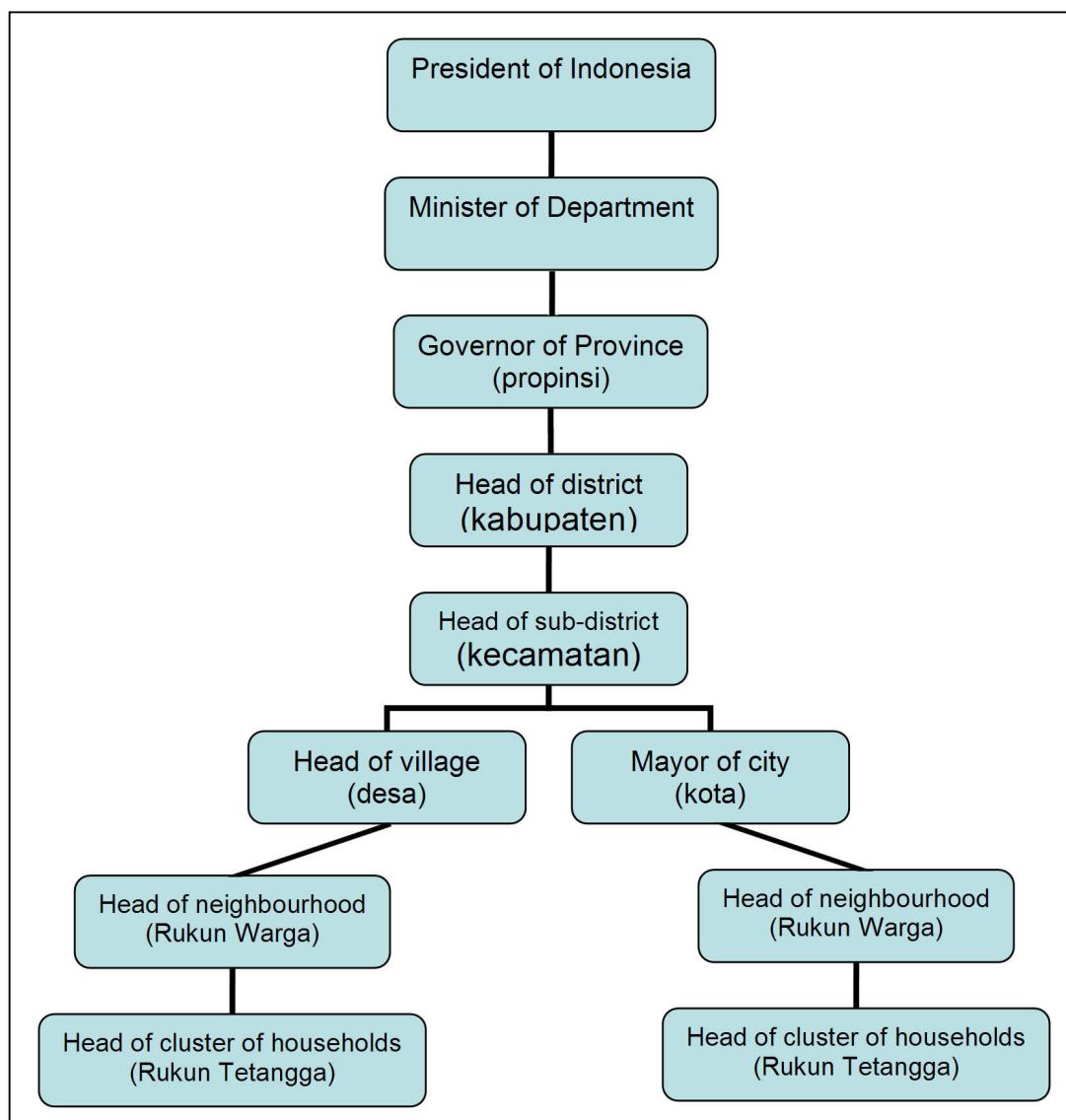
Appendix 1

Rice producing countries

Top ten rice producers, 2003 (paddy production in metric tonnes)	
1. China	166,000,000
2. India	133,513,000
3. Indonesia	51,849,200
4. Bangladesh	38,060,000
5. Viet Nam	34,605,400
6. Thailand	27,000,000
7. Myanmar	21,900,000
8. Philippines	13,171,087
9. Brazil	10,219,300
10. Japan	9,863,000

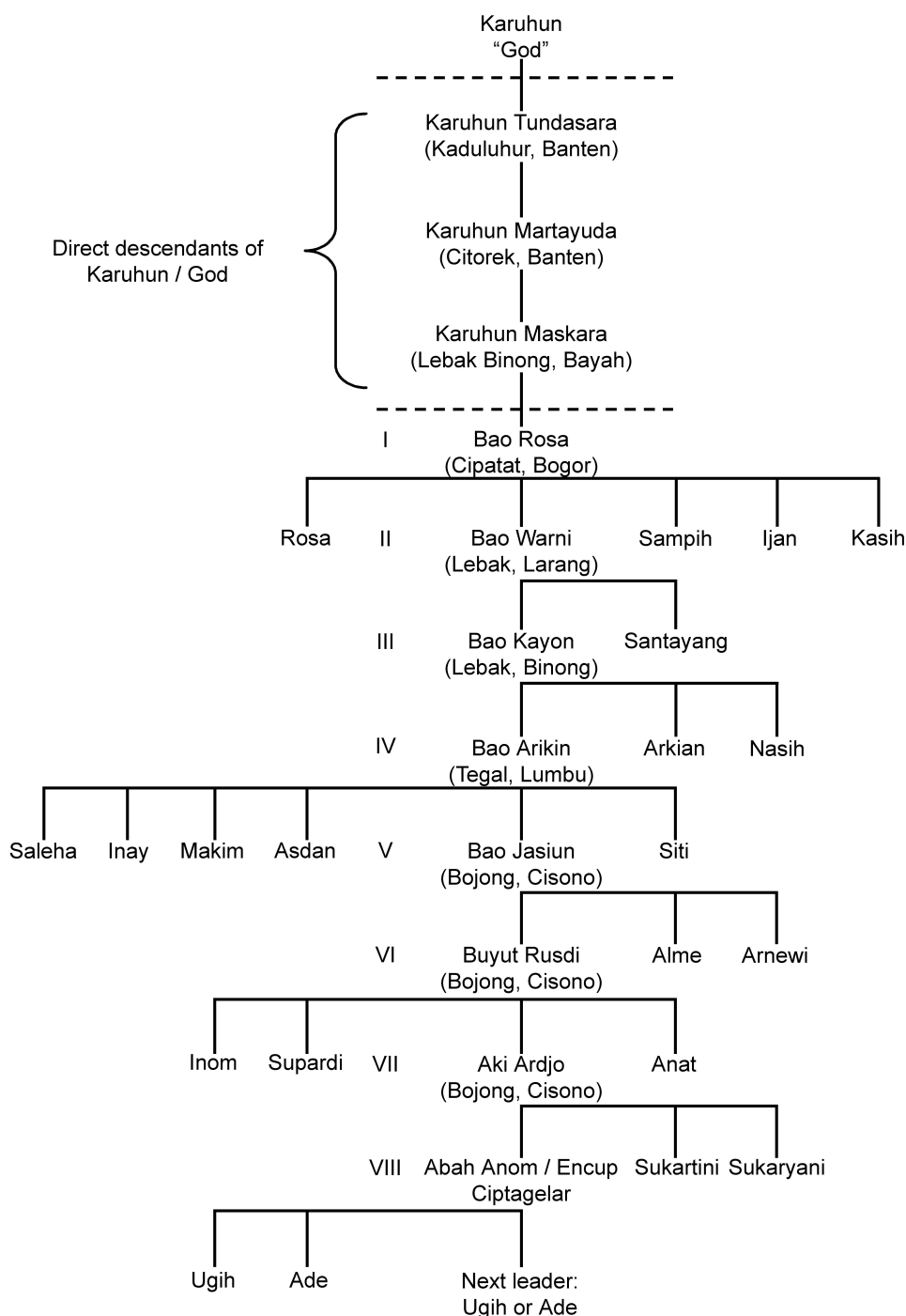
Source: FAO, 2004

Appendix 2 Organisational structure of the Indonesian government



Source: Alcorn & Antoinette, 2000

Appendix 3 Genealogy of the Kasepuhan leaders



Source: Adimihardja, 1989 and an interview with Abah Asep

Appendix 4

Traditional and non-traditional villages around Gunung Halimun

<i>Kasepuhan Kampung</i>	<i>Sesepuh Kampung</i>
Chenku	Maj
Ciarakuning	Aki Nurka
Cihangnasa	Aki Ajo
Cikuluwung	Ki Du Ki
Cinala I	Podjod
Cinala II	Murhini
Ciptagelar	Abah Anom Sucipta (Sesepuh Girang)
	Abah Mardjuhi
	Aki Sukamulia
	Ki Adong
Ciptarasa	Aki A-at
Cipulus	Aki Tarot
Cisuren I	Ki Udeng
Cisuren II	Ki Unata
Cisuren III	Ki Du Te
Cisuren IV	Ki Urua
Kabunglubu	Ki Anom
Kapidankum	Ki Ja-i
Lebak Harijang	Aki Sukanta
Lebaknangka	Ki Utar
Malading	Aki Isja
Nanggrang I & II	Aki Udin
Pamokoan	Ki Upen
Pasir Kupa	Ki Juda
Sirnarasa	Aki Deijong
	Aki Swardi
	Aki Nudji
Sirnarmanitis	Ki Ogay
Sitamurni	Ki Omon
<i>Non-Kasepuhan Kampung</i>	
Cisarua	
Ciganas	
Panjunganan	
Ci-Idun	
Pankalan	
Cililiu	
Nangra I	
Kerakuning II	
Ciarca	
Cisagu	
Seliawi	

Source: interview with bapak Absor

Appendix 5

The legend of Prabu Siliwangi and Kiangsantang

Once upon a time, Prabu Siliwangi – king of the Padjadjaran – and his son Kiangsantang were having trouble with each other. Kiangsantang decided to fly to Mecca, to find himself an opponent to fight with. He is convinced that there is no one stronger than he is. In Mecca, he meets a person, but Kiangsantang does not know that it is Saidina Ali. He tells this person that he wants to fight Saidina Ali, not realising that his opponent is already standing in front of him. Kiangsantang states again that there is no one stronger than he is and that he wants to see the blood flowing out of the body of Saidina Ali.

In between the two rivals, a stick is standing in the sand. Saidina Ali challenges Kiangsantang to pull out the stick from the sand. Using all the power in his body, Kiangsantang tries repeatedly, but he does not manage to get the stick out of the ground. After a while, he starts to bleed and eventually he gives up. With his body covered in blood, he goes to the house where Saidina Ali lives and asks “why are my arms red and wet?”

Disappointed about his defeat, Kiangsantang decides to go back home to Bogor, West-Java. On his way back however, Saidina Ali touches the sea so that Kiangsantang almost drowns. Forced to return to Mecca, it appears that the only way to save his life is to make a deal with Saidina Ali. First, Kiangsantang has to read the Koran twice and second, he has to recite the following text twice:

Ashadu ala ilaha ila lahu wa ashadu anna Muhammadan abdoho wa raswuloh

I testify that there is no god but Allah and I testify that Muhammad is His slave and messenger

After finishing the testimonial, Saidina Ali circumcises Kiangsantang. He has become Muslim now, and is allowed to go back to Indonesia. Here, he tells everyone about the fact that he is a Muslim, and that the people have to follow him in his belief. However, when the first people agree to join, Kiangsantang makes a mistake during the circumcision. Instead of cutting away the foreskin of the penis of the male followers, he cuts off the whole penis. Several males do not survive this, and consequently people become scared of Kiangsantang and his new religion.

Totally confused about the disappointing effects of his efforts to convert the Indonesian people to Muslim, Kiangsantang decides to go back to Mecca once more. In search of advice, he meets Saidina Ali again. The details of the right way to do a circumcision are explained to Kiangsantang now. With this new knowledge, he returns to Bogor and continues to convert people into Muslims.

However, Prabu Siliwangi, the father of Kiangsantang, practices Hinduism as a religion. His son forces him to convert and become a Muslim, but he does not agree. Moreover, he is insulted because of the lack of respect, telling Kiangsantang that ‘you do not treat me like a little boy’. A fight breaks out between the father and his son, but when Kiangsantang recites the Arabic text twice, Prabu Siliwangi suddenly disappears.

By travelling under the ground, Prabu Siliwangi is able to escape. Going westwards from Bogor, he rises above the ground again in the settlement of Munjul. Furious about the fact that his father is running away, Kiangsantang decides to chase Prabu Siliwangi. Just on time, Prabu Siliwangi disappears under the ground again, coming to the surface in the settlement of Panyauangan. The hunt continues to the settlements of Cisih, Kedeper, and finally Rawayan, a *Baduj* village. When Prabu Siliwangi arrives at the *Baduj*, Kiangsantang suddenly stops chasing his father. He gives up and returns to Bogor.

Prabu Siliwangi decides to stay in Rawayan and become a member of the *Baduj*. Because of his wisdom, he becomes a teacher and one of his students his Bao Rosa. After a while, Bao Rosa decides to leave the *Baduj* in order to establish his own group. Consequently, he becomes the first leader of a separated group of the *Baduj*, which is now known as the *Kasepuhan*.

Source: interview with bapak Dedi, in the settlement of Cisolok

Appendix 6

Ceremonies of the Kasepuhan for traditional wet rice cultivation

	All kampungs	Single kampung	Private / family
August	Seren Taun / Syukuran		
September			
October			
November			
December	Syukuran	Syukuran	Tebar
January		Syukuran	
February		Syukuran	
March		Syukuran	
April	Syukuran	Syukuran	
May			
June			
July			

The grey area marks the period in which cultivation of a sawah takes place

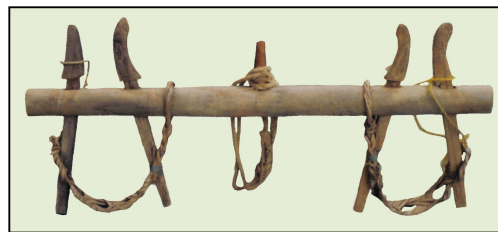
- Seren Taun:** Ceremony for all members of the *Kasepuhan*, which takes place in the village of Ciptagelar. The goal of the ceremony is to thank the spirits, gods and goddesses for the harvest and to pray for another successful year.
- Syukuran:** Ceremony that takes place three times a year for all members of the *Kasepuhan* and five times on village level. The aim is to pray for the protection of crops, to get the blessings of rice goddess *Dewi Sri* and for a successful cooperation during the work on the field.
- Tebar:** Small and private ceremony before sowing the *sawah*. With this ceremony, the *Kasepuhan* express their holistic view of the universe and pay respect to rice goddess *Dewi Sri*.

Source: bapak Rahman; bapak Ahdi; bapak Absor

Appendix 7a Tools for wet rice cultivation



Cangkul – hoe for removing weed



Pasangan – halter for buffalos



Garpu – pitchfork



Garu – plough for levelling the sawah



Pacul - spade



Bedog – knife for multiple purposes

Appendix 7b Tools for wet rice cultivation



Sinkal – tool for rough ploughing



Tolok – basket for paddy during harvest



Nyiru – for separating grains from skins



Etem – traditional cutting tool for harvest



Lisung – traditional method for threshing



Sabit – non-traditional cutting tool for harvest

Appendix 8

Traditional and high-yielding rice varieties

Traditional rice varieties used by the Kasepuhan (one harvest per year)

Alean	Ketan Huis
Badigal	Lepo
Bilatung	Markoti
Cere Beureum	Nemol
Cere Demek	Odeng
Cere Gelas	Pare Jidah
Cere Jaer	Pare Koropak
Cere Kalapa	Pare Nemol
Cere Kawat	Pare Resik
Cere Kiara	Pare Sero
Cere Layung	Pelita
Cere Mantare	Peuteuy
Cere Ramaga	Peuteuy Hideung
Cere Sugih	Peuteuy Muhara
Cere Walet	Putri
Cikur	Raja Denok
Cinde	Raja Sana
Dirah Bairah	Rante
Dkt	Rogol Beureum
Gajah Benur	Rogol Bodas
Ganggarangan	Seba
Hawara Beuneur	Sri Kuning
Hawara Beureum	Sri Mahi
Hawara Jengi	Tambleg
Hideung Bulu	Tampeuy Hideung
Hoe Bulu	Tampeuy Muhara
Jambu	Terong
Jidah	Terong Bodas

High-yielding rice varieties used by non-Kasepuhan (two harvests per year)

Murni
Super
Ekor
Padan Wangi
Ir
Salak
Denramon
Agogo
Jareum

Source: Adimihardja, 1989; bapak Absor; bapak Uzu; bapak Radi; bapak Kokon

Appendix 9

Timing within the traditional and non-traditional system

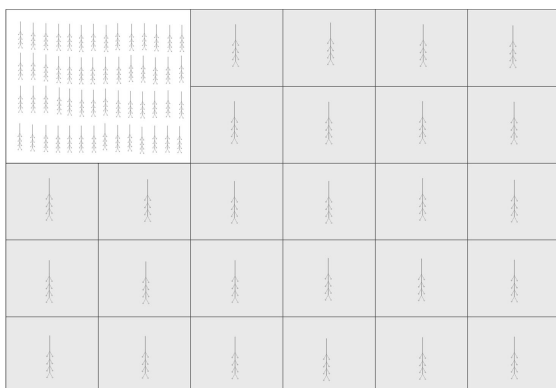
	Month	Traditional system	Non-traditional system
2005	December	Sowing	
	January	Maintenance	Sowing
	February	Maintenance	Maintenance
	March	Maintenance	Maintenance
	April	Harvesting	Harvesting
	May		
	June		Sowing
	July		Maintenance
	August		Maintenance
	September		Harvesting
	October		
	November		Sowing
	December	Sowing	Maintenance
2006	January	Maintenance	Maintenance
	February	Maintenance	Harvesting
	March	Maintenance	
	April	Harvesting	Sowing
	May		Maintenance
	June		Maintenance
	July		Harvesting
	August		
	September		Sowing
	October		Maintenance
	November		Maintenance
	December	Sowing	Harvesting
	2007	January	Maintenance
February		Maintenance	Sowing
March		Maintenance	Maintenance
April		Harvesting	Maintenance
May			Harvesting
June			
July			Sowing
August			Maintenance
September			Maintenance
October			Harvesting
November			
December		Sowing	Sowing

Source: bapak Absor; bapak Uzu; bapak Radi; bapak Kokon

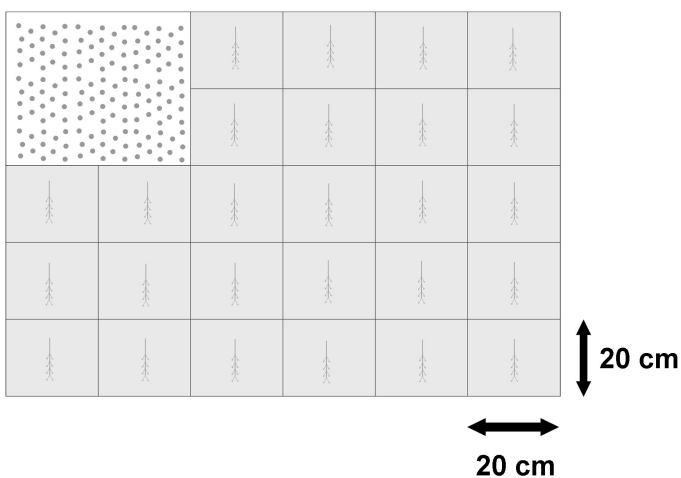
Appendix 10

Schematic overview of a traditional and non-traditional sawah

Traditional sawah



Non-traditional sawah



Area for harvest (tandur kotakan)



Branches in compact area (pabinihan), moved after 1 month



Seeds in compact area, branches moved after 1 month

Source: bapak Ugil, bapak Uzu, bapak Radi

Appendix 11

Summary of the internship report

*The interaction between local authorities and the Kasepuhan
In relation to the utilisation and management of traditional wet rice cultivation*

In the southern area of National Park Gunung Halimun, West-Java, a traditional rural community called the *Kasepuhan* still practises traditional wet rice cultivation. This can be characterised by only one harvest per year, the utilisation of specific tools, and production for self-sufficiency only. However, the Indonesian government has been maintaining a strong modernisation policy in relation to wet rice cultivation during the last decades.

The report focuses on the question if this policy altered the traditional rice cultivation of the *Kasepuhan*. If so, what aspects of the cultivation process have changed and how where these changes set in motion by the government? Is there a certain pressure on the way in which the people of the *Kasepuhan* cultivate their fields, caused by local official authorities on the one hand, and the traditional authorities on the other hand?

The highest traditional leader of the *Kasepuhan* is granted with an almost unlimited legitimacy with regard to his leadership and policy. The people of the *Kasepuhan* accept this leadership in the perception that their highest leader is chosen by their ancestors, and that his policy is indirectly determined by the same ancestors. For the survival of the traditional way of life of the *Kasepuhan* in general, and for the subsistence of him as the leader, it is of crucial importance that the people *Kasepuhan* continue their traditional way of cultivating *sawahs*.

The Agricultural Service Office, a local department of the Ministry of Agriculture, is still practicing their policy of changing the traditional cultivation of self-sufficiency towards rice as a commodity product. In the era of Suharto this happened in a very structured and rigorous manner. All aspects of traditional *sawah* cultivation were to be changed. Since the fall of the regime, decentralisation is commonly used as a tool to transfer responsibility from higher levels of government to lower levels. The Service Office still tries to influence the traditional methods and techniques used by the *Kasepuhan*. As a consequence of decentralisation, the *Kasepuhan* are confronted more often with the Service Office. The Service Office tries to make clear to the *Kasepuhan* and their leaders what the advantages are of switching to two or even three harvests per year. This is specifically done by attempts to introduce high-yielding rice varieties and the introduction of chemical fertilisers.

Switching to a commodity system of rice cultivation by *Kasepuhan* farmers does happen. But it implies a permanent renouncement of all *Kasepuhan* traditions. In this case a farmer is not allowed to live within the territory of the *Kasepuhan*. The surplus of the harvest can be sold though, which might imply the generating of some money and a better way of life in a financial sense. On the other hand, if a harvest fails, there is no support of the traditional leader or the *Kasepuhan* community. Moreover, leaving the *Kasepuhan* community also means living in the lower areas of the mountains, and thus less access to irrigation water. Within the community, there is far more cooperation between *Kasepuhan* farmers considering the cultivation of *sawahs*.

It seems right to conclude that the people of the *Kasepuhan* are squeezed between their tradition and *adat* on one side, and the attractiveness of more financial welfare on the other side. This might be influenced by the effects of decentralisation of governmental departments linked with the Ministry of Agriculture.

Official institutions such as the Agricultural Service Office are possibly focused too much on the economical perspective – although with well-meant intentions – and too less on the

reasons why the *Kasepuhan* live their life in this specific way. Moreover, there are also large international institutions that share the ideas of the Service Office. The customary laws of *adat*, the legitimacy of power of the highest traditional leader and the certainties that the community provides for individuals, are the reasons for *Kasepuhan* farmers to continue their traditional utilisation of *sawahs*. The official institutions do not seem to understand that their efforts to economically develop the traditional *sawah* system are likely to fail. In other words, these official institutions do not seem to be able to understand the logics behind the *Kasepuhan* way of life – seen from the perspective of the *Kasepuhan* themselves.

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