An Attempt of finding way to deal with and to recover declining Primary Industry with Depopulation Problems making use of the traditional Cultural Heritages, in case of the small mountain Village Nakajou-mura, Nagano-Ken

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Abstract: Most of Japanese mountainous areas consisting of great many small municipalities are commonly suffering from depopulation and regional declining problems.

To find ways for resolving and overcoming those regional problems and to promote economic activities are and to prepare receiving the near future high-aged person’s societies are urgent necessities for those mountainous regions today.

During the period of high economic growth, the increasing number of urban dwellers has far surpassed the rural populations and traditional life styles also has been transferred from the traditional ones to the modernized ones most of them were those of western styles substantially in the process of urbanization all over the Japan.

Larger amount of urban dwellers has with their origin rural regions, most of them had left their homeland and had become urban habitats during the 1960s and 70s. Those new commmers has easily received modernized and uniformed urban life styles those of housing, cooking and consuming foods and clothings.

Despite these changes of working place and lifestyles, many people have eager nostalgic feeling attitude toward their past world consisting of various rural living materials such as housing, furniture, foods, cooking materials and so on. They have also strong nostalgia toward the homeland landscapes that reflected rural area’s agricultural and forest land use systems.

Under those circumstances today, those various local living materials and goods are largely attentioned as the historical and cultural heritages because they can attract many peoples in the tourism. But originally those living materials and goods and, landscapes has been formed indigenously under the natural process basing on the people’s traditional eco-system life. Those were previously rather normal things rather than remarkable ones. Now they are undergoing metamorphosis from the simple traditional and cultural relics to the new evolitional tourism resources.

They will contribute greatly to revive the mountainous villages to overcome their difficult problems such as depopulations.

Key words: Mountain village, Depopulation, Regional problems, Traditional cultural heritages, Tourism development
1. Introduction

This report is aiming at making clear and recognizing regional character of the Nakajou-mura, by means of surveying and collecting various informations. Those informations include natural environment, land use and its transitions, local peoples life and culture, history, and others. They are analized and examined considering geographical implications. It should also be surveyed from the multi-disciplinary geographical viewpoint that how the Nakajou-mura is composed of different each areal portions. What is the Nakajou-mura's spatial structure and how they are facilitating? And how Nakajou-mura are linked with other near and distant regions?

Under geographical close examination, we will be able to find more adequate ways for the village peoples future life planning.

II. Nakajou-mura's Physical Geography

1) Geology

Fig. 1 The location of the Nakajou-mura

国土地理院，1：200,000 地勢図「長野」による
Nakajou-mura is situated in a corner of the Saigawa Hilly Province, which forms one of the geologic and geomorphic province. Saigawa Hilly Province is a member of the hilly relief groups represented in the 1:200,000 TAKADA topographical map as the Higashikubiki and Uonuma.

Under more global scale observation, they start from its northern tip in Akita Prefecture and extend along the Japan Sea Coast via Yamagata and Niigata Prefectures to the southwestern direction till end in the northern portion of the Nagano Prefecture (Fig.1). Its topographical similarity is the hilly ones with gentle relief surfaces having a flat tops. Geologically it had origin of the Pliocene and Plistocene sedimentary rocks. In this area frequently landsliding activities occurs and the large rice terrace landscapes has developed. Saigawa Hilly Province is located in the southwesternmost portion of this widely extending region. It is also coincident with so called the “Green-Tuff” geologic zone.

2) Valley and River System

In the topographical map (Fig.2), ridges extending northerly on the left side of the Dojiri river can be identified with a flat top or convexed curved gentle slopes.

Through Nakajou-mura Dojiri River, one of the major branch of the Sai River, is flowing from the west to the east, exposing incised meander. It shows that this is a

![Fig.2 Distribution of the Springs used for Sources of potable water supply, Nakajou-mura](image)

長野県高等学校地理教育研究会（1992）による
antecedent valley.

Dojiri River flows through Nakajou-mura, joining several branch river such as Yakushi-zawa, Kan-zawa, Kariyado-zawa, Shimizu-zawa, and Umeki river. “Zawa” means a narrow and deep valley with flowing water. Each of those branch river forms deep eroded valley with steep gradients and are arranged from the west to the east pararelling north to south orientation (Fig.2).

Rain and underground waters endlessly eroded planation surfaces and made several branch valleys developed north-south direction which run pararell with each other and flow into Dojiri River near right angle. Those valleys ended at the valley head and crosssed with the volcanic rocks and resulted in formation of the large hollows looks like a gracial cirque. Here we can find deposited weathered soil and abundant groundwater seepages. Here is also the stage of the large rice terrace landscaps.

3) Hilly Landform is dominant

Among the existing geomorphic surfaces that were the result of the erosion activities through planation surface making agency toward the sea water level in the Northern Shinshu, the oldest and the highest one is named “Oomine-Men”, -Men signifies old time flattened surface. Erosion had closed presumably 1,000 or 700 Kilo Years ago, on the midst of the Pleistocene.

Most of the areas of Nakajou-mura are prevailed over by hilly landforms. This horizontal surface shows penelope planation surfaces, and distributes very wide areas and extending with gentle gradient. This surface is composed of three altitude members, of which are approximately 500-650m, 700m-800m, 800m-1,000m and above over, although the lowest one is belonged to the river terrace of the Dojiri River.

In Nakajou-mura, those hilly surface can be traced from the southern direction to the northern direction till the Mushikura mountain foothills at about 1,000m altitude. Here sedimentary formation collides with Mushikura-yama’s volcanic rocks and relief is suddenly obstructed by the Mushikiura-yama’s 1300m cliff like steep slope (Fig.4).

At the middle altitude area extending from 650m to 800m highs, although there exist many settlements and cultivated fields, we cannot find paddy field for rice. The reason is as follows. Firstly no water is available because it is far distant from small and deep valley bottom (Fig.2). Secondly, those settlements and their arable land are situated on the place of where parent rocks are originated sedimentation of the Miocene and the Pliocene Epoch. Through the weathering actions parent rock structure are loosened, decomposed and argillization has been processed for very long time. A huge quantity of clay particles has been produced and dispersedly contained in the parent rocks. This make the capacity of holding soil moisture very favorable. And this soil condition have sustained agricultural activities very well for dry field crops other than rice.

4) Climatic Conditions

Almost whole district of this large hilly province excepting Saigawa portion, located
Cultural Heritage and Tourism in Nakajou-mura

Fig. 3 Capacity of Water Supply Sources (m³/day)

Fig. 4 Relief Summit level surrounding Nakajou-mura after Hirokazu Kato and Sadayuki Akahane (1986)
in the windward slopes receiving heavy snowfall during winter season, vegetation and land use reflect this climatic condition prevailing over Japanese Cryptomeria afforestation with paddy cultivation. On the contrary, of its leeward location, Saigawa Hilly Province shows contrast landscapes in which dry upland field crops are prevail over and rice cultivation have minor position. Being belonged to the Saigawa Hilly Province, Nakajou-mura has continued to grow such upland field crops as wheat, buckwheat, soybeans, redbeans and other vegetables in place of rice growing. This is one of the background of the traditional food speciality "OYAKI".

The northern part of Nagano Prefecture lies in one of the snowiest region of Japan. For example, amount of snowfall in February is as follows, Hakuba 221cm, Iizuna Kogen 100cm, Nozawa 145cm, Shiga Highland 214cm. Because of its leeward position, Nakajou Village has small snowfall along with Nagano City, about 15cm.

With its location on the southern mountain slopes, leeward position, during the winter, Nakajou-mura can get rid of the heavy snowfall and it make possible the winter wheat production. Local peoples were almost self-sufficient for their foods, and on this base, they have made trials of growing more profitable cash crops.

III. Nakajou-mura’s Location in the Transportational Network and its Spatial Structure

1) Nakajou-mura’s Linkage with other Regions

Nakajou-mura and its surrounding villages as Kinas, Togakushi, Ogawa are called together “NISHI-YAMA District”. “NISHI-” means west, and “YAMA” is mountainous area, both meaning the western mountainous area of the Nagano City.

Through the “Nishiyama” region two rivers are flowing from the west to the east. One is the Susobana river flows northern side and the other is the Dojiri river, similarly southern portion. Along those river valleys, alluvial floodplains and river terraces developed, with narrow and stretching shape parallel to the valley. Valley landforms devoted to agricultural, governmental, social and transportational footing, among them the transportational facility is the most important (Fig.1).

So Dojiri river valley serves as a corridor between Nagano City and Hakuba village, both of them has Olympic Game Arenas of the Year 1998. Hakuba Village is situated west of the Nagano City and have connected by newly constructed highway called Olympic Road. From Nagano city its distance is approximately 35kms and we can approach Hakuba leaving Nagano after one and a half hours driving.

Nakajou-mura is located on the way from the Nagano City to Hakuba village. Between in other villages as Ogawa and Miasa are located Hakuba and Nagano. Nakajou-mura is expected to be effectively affected and to be lively again and to overcome her depressed situation by the Olympic Game Events. New road connecting
Nagano and Hakuba Olympic Game Arenas have been planned and completed in accordance with the NAOC and government.

2) Some Spatial Structure of the Nakajou-mura

According to the relief surface gradient, we can distinguish that there are three different surface units in the Nakajou-mura area.

First is the highest altitude one, that occupies more higher areas than 800m altitudes. It has the most steepest slopes among the three units and is represented as the enclosed range by the contour lines above over 800m. Geologically, they are with its origine volcanic andesite rocks, inside having great many small cracks receiving rainwater and facilitating a sort of reservoir. Those rocks rise to the sky and looks like monadnock landforms.

The second unit the middle altitude one extending from approximately 650m to 800m altitudes, and are represented by the contour line as relatively gentle gradient. By tracing and examining 800m contour that is pointing the top portion of the middle altitude ones shows letter “S” shaped curves projecting southward again and again. They are surfaces left behind from the erosion agency, and here, north-south paralleling small valleys are deepend endlessly by flowing rivers through all the times of the Holocene Era, but they could not be wholly eroded up and most of the original surfaces remains yet today. They are exhibiting hilly figures.

The third one is the alluvial plain portion extending from the west to the east along the Dojiri river valley. Their altitude is the lowest, extending from 500m to 650m. River terrace areas are included. River valley alluvial portion is susceptible to floodings.

Fig.5 and Fig.6 both suggest recent spatial structure of the Nakajou-mura. Fig.6 shows the location of commodity shops of daily necessities. They located facing to the prefecturally-run road of Ohmachi-Nagano Line. Adding to those shops various service facilities for the local people such as school, village government office, policebox, and medicals are also located and, by them, the core settlement with partially built-up area is formed.

For the present local people it is convenient to live and to receive within the proximity area of those service functions are facilitating. It resulted in the minimum population decrease within those settlements paralleling the prefectural road, Dojiri river valley bottom (Fig.5). To go to anywhere destination outside of the Nakajou-mura it is available and are accessible from the river valley bottom rather than from the more higher altitude locations.

But, this is not true from the ancient times. Those situation have arised rather recently, from the time when road improvements were eagerly promoted and the automobiles were widely used.

During former days, valley bottom road was not so convenient as the present days. Instead of the valley bottom route, ridge trailing routes were prosperous (Fig.7). In
Fig. 5 Nakajou-mura's Depopulation Ratios iso-value Map, 1990/1965×100
長野県高等学校地理教育研究会（1992）による

Fig. 6 Distribution of nondurable goods shops in Nakajou-mura
長野県高等学校地理教育研究会（1993）による
Saigawa Hilly Province, reliefs with a flat tops on the more higher section than the valley bottom are widely exists and local peoples used those landforms very cleverly. They developed such road that curves frequently but with minimum vertical up and down. For trading purpose, they transported on those road such commodities as tobacco, hemph, paper materials kozo, and cocoons. Of course they communicated on those roads for their dairy life. They carried their cargo on the horse or cow backs directly. From the ancient times till recent at the early days of 1960s, as then has begun bus service operation regularly, those ridge trailing roads were fully facilitated.

Formerly there were no problems to dwell on and to cultivate land on more high altitude hilly areas than the valley bottom. Because local peoples were supported and favored by ridge trailing road networks.

Since before the Middle Ages through Nakajou-mura two historically important roads had passed. One of them was the way for the Togakushi Shirine, another was for the Zenkouji Temple. They also trailed on the ridge routes. They were very clever travel route because they had avoided destruction by flood damages as valley bottom areas were frequently suffered. Numerous peoples had traveled on those ridge roads for visit.

Fig. 7 Old Historical Highways surrounding Nakajou-mura, almost all of them trailed on Ridge Routes

虫倉山総合調査研究会（1994）による
the Togakushi Shirine or Zenkouji Temple as the worships (Fig.7). On the latter, for centuries it has been the ambition of pious Japanese to visit Zenkoji Temple once during their lifetime.

IV. Settlement Locations, Agricultural Landuse, and Peoples Food

Culture of the Nakajou-mura

1) Settlement Locations

Through the village from the west to the east the River Dojiri, a major branch river of the Sai, flows and forms along its both side river terraces. In the modern age main transportation route has been developed paralleling this valley.

Densely populated areas being composed of village offices, shopping houses, agricultural cooperation stores, elementary and secondary schools, Medical functions are forming core settlement of the village.

With its origin of terially sedimentary rocks and geological weathered conditions, landslidings are active and resulted in frequent natural destruction occurrence in Nakajou-mura. Village inhabitants had experienced such disaster many times.

To minimize the landslide destructive damages, each settlements are small and located dispersedly from each other. By such way habitation they had been adopted to those natural environments.

2) Landscape Observation from the Dojiri River Valley till the Mushikura-yama Foothills

As we make a small trip from the valley bottom where exists village core settlement toward the more higher altitude portion we can find another settlements on the higher and older river terraces.

In the watching landuse we can observe changing of growing crops from that of paddy to upland field crops as soy beans, Nozawana vegetables, chinese cabbages and mulberry bushes (Fig.8).

With gradually ascending we can get more widely nice view in all directions.

Finally we will reach at the peneplain tip section that is the highest point of the sedimentary rocks and prevented its northern extention by the volcanic rocks with large blocks (Fig.9).

On this point we can find again rice cultivation field which appears very different from that of the Dojiri river valley bottom. Here extending landscape is of the same rice terrace described many times in various writings as a reflection of the characteristic landuse social and natural environment had produced together.

More higher altitude areas beyond the rice terrace section becomes forested areas. Japanese Cryptomeria has been planted and grown for lumber purpose use and various decidous trees for charcoal and fuel purposes at one time are today leave alone without
Careful management and rampant orderliness. A little of deciduous trees are used for mushroom raising seedbed.

3) Peoples Life in the traditional Cooking and Foods

Food speciality such as Oyaki which looks like nan bread cooked by baking powder reflects their characteristic food culture not based on rice cultivation but on upland field crop cultivation. Food materials are such as wheat, barley and various vegetables.

Oyaki cooking process is as follows. At first, crust is prepared. By adding water and
mixing, flour is softened, little more hard and solid than for soba cooking. Then prepared vegetables are wrapped in the crust. Finally it heatend up from both outer sides. There are several heating ways. One is baking in the hot wood burnt ash, this is the most traditional. Another are heatings by steamed or by panned.

Oyaki, its burnt crust smell similar like of Indian chapati or Middle Eastern nan bread. Oyaki is usually made with whatever vegetable is in season. In Nakajou-mura, it is cooked by traditional way baked in hot ash. Recently their cooking way and their taste is appreciated to be worth for posterity descending. They are recognized a sort of cultural heritage. Oyaki was and is very popular food for the people of all over the Shinshu District, although recently are especially highlightend as a important resource of the tourism.

4) Small Significance of Rice Production

The parent rocks under the cultivating fields are relatively soft and rock structures are loosen through weathering and easily be parted for cultivation purposes of crop raising.

Making use of natural environments those of geomorphological upland nature and geological soil character, village people examined and challanged again and again to select more profitable variety of field crops that can get more larger income.

In Nakajou-mura rice cultivation had relatively little significance in the agricultural landuse and farmer’s household management. Among growing items upland field crops far surpassed rice cultivation. Within total 900ha arable land, paddy fields for rice production accounts only 100ha in 1996. In the same year on half of them transplanted and 220t unhulled grain was harvested. This amount is approximately two third of the Nakajou-mura’s annual total consumption.

In Nakajou-mura, along with surrounding villages, local people had to live on upland field crops other than rice. This had created an interesting behavior of the local people. In the choice of crops, people had decided almost by themselves what sort of crops to be grown. In the Edo Period, Tokugawa Feudal Age, local people did not like to raise crops under the forced order of the feudal government. They often rejected to raise ordered crops having made up a pretex that the soil was infertile or unsuited or, unfavorable weather conditions. On the other hand, they seeked persistently the most profitable crops to make their income be maximum. Through the Premodern and Modern Ages, selected crops were as such ones, tobacco, hemph, mulberry for paper (Kozo), and mulberry for sericulture.

Yes, their common nature of the crops was, cash crops for sale, and consumed for industrial purposes.

On agricultural landuse and household management, rice cultivation has only small significance. Most of farmers are small scale, but for very long times they has been engaged in cultivation of the cash crops.
They are raised for sales and not for subsistence. Barley, wheat, buckwheat, soybeans, redbeans are cereals one, tobacco, hemp, mulberry, paper mulberry, and Nozawana vegetables and Japanese radishes are other ones. Among them, wheat and buckwheat are milled and processed for cooking Oyaki, one of the famous local food along with Soba.

V. Agriculture, Forestry, Cattle Raising of the Nakajou-mura

1) Transition of the Cash Crops

Following the 1980s Agricultural Census Data, Nakajou-mura’s total arable land amounts to approximately 650ha. Of the amounted total arable land, paddy field occupies 116ha, ratio is only 18 per cent. On the contrary, Upland field extends widely and has areas of 533ha, with its ratio 82 per cent. This is very high ratio and has important significance as compared with 49 per cent of the whole average value of the Nagano Prefecture. Agriculture of Nakajou-mura has been depended heavily on upland field crops. On the other hand, paddy field cultivation has relatively large significance in the total Nagano Prefectural average value.

Once at a time growing hemphs was flourished. Then growing tobacco became excellent in place of hemphs.

Although farmers of the Nakajou village has been heavily dependent on growing cash crops typically such as sericulture, their household management character is subsistence one, so as a whole, they are petty farmers.

Today some farmers have begun to grow pumpkins or Nozawana vegetables and chinese cabbages in place of wheat and barley or soy beans once at a time were major crops.

The principal agricultural activity in the Nakajou-mura’s upland area at one time was that of sericulture. After World War II, as sericulture declined and other agricultural sector experienced similar circumstances especially during the High Growth Era.

2) Forest Production and Paper Mulberry

Charcoal production was once important in Nakajou-mura. Many wood of deciduous species were used for charcoal production. But during 1960s the demand for this fuel and activity declined keeping pace with heating oil and propane gas became widely used. While the demand for wood for pulp and as construction material has been greatly increased, wood imports expansion was rapid keeping pace with above mentioned demands and consumptions in place of domestic products. Domestic timber production declined in great degrees along with charcoal production.

“Kozo” was one of the Japanese paper important materials made from paper mulberry. Most of them were widely used for sliding doors in Japanese traditional house.
increase, both results in natural decreases. Recently, decreasing number of natural are becoming more larger and seems to be equal to as the social decrease number.

This day population decreasing problems has suffered Japanese almost all mountainous areas. Above all, this subjects is more serious and typical in the Nagano Prefecture because of its most regions are included in moutainous areas. Nakajou-mura belongs to such mountainous areas and has been suffered by the same problems.

In the daytimes of the weekday, there is a high proportion of senior citizens and children in the village. Both male and female active labour persons are engaged in nonagicultural occupations in urban area, outside of the village. Most of those peoples of Nakajou-mura are commuting to their place of work in Nagano urban area.

Part-time farm operation became common pattern because distances from the
Cultural Heritage and Tourism in Nakajou-mura

Table 1. Population Decreasing in Nakajou-mura

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Source: 長野県総務部情報統計課（毎年次）より筆者作成

Nakajou-mura to the working places of the Nagano urban area are relatively short and the commuting is easy, so some younger people have inhabited in the village and engaged in nonagricultural works outside of the village.

Life of the village in remote settlements from the village center of the valley bottom have become inconvenient. Receiving medical and other public services and shoppings become gradually inconvenient because quick moving by car is difficult for high-aged persons.

To overcome those hardships, one of the effective method is the improvements of road. This make possible to maintain public transportation, periodic clinic services, elementary school’s consolidation, and shopping services by private stores.

VII. Conclusion—some Perspectives of the Nakajou-mura’s Future by utilizing Nakajou-mura’s Resources—Folk Tales, Food Specialities and nice mountain Views of the Nakajou-mura and surrounding area ...may become tourist attractions

1) Folk Tales

Nakajou-mura is at the foot of Mt.Mushikura. Village people look up this moutain daily and had prayed their everyday life’s tranquility and abundant agricultural harvest. In ancient days people had believed that in the deep interior of the Mushikura mountain, the super lady “OOBA-SAMA”, a heroine of the folk tales inhabited. People of Nakajou-mura has many folk tales decended from their ancestors. Among those tales, “OOBA-SAMA” played very important role. “OOBA-SAMA” was one of the aged lady having
小出武（1977）：犀川丘陵の自然と居住の関係 長野県地理 第3号 PP.77-81
小林寛義（1985）：長野県の地誌 信濃出版部 364P．
小出武（1986）：地域性について 『信州の風土―地理と教育―』小林寛義先生退官記念論文集刊行委員会、信濃教育会出版部 PP.39-50 所収
代表佐藤甲子博士・虫倉神社史編集委員会（1990）：虫倉神社と広福寺 146p．
中条村教育委員会編：中条の昔話り 平成3年（1991年） 272p．
長野県高等学校地理教育研究会：「会誌地理研究」第24号（1992年）・第25号（1993年）
虫倉山系総合調査研究会編：むしくら―虫倉総合調査研究報告―平成6年 1994年 長野市・戸隠村・鬼無里村・小川村・中条村 733p．
長野県総務部情報統計課：長野県の人口 毎年次