Analysis of an Agricultural Transformation Prototype (ATP) for Raising Rural Area’s Superiority in Taiwan

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ANALYSIS OF AN AGRICULTURAL TRANSFORMATION
PROTOTYPE (ATP) FOR RAISING RURAL
AREA’S SUPERIORITY IN TAIWAN

Pei-Chi Chang, I-Jyh Wen
Chi-ming Lai

Under globalized capitalism, prospering industry and commerce and contin-
uously expanding cities, the importance of agriculture has been gradually
diminishing with the relatively backward rural development. This has been
the common phenomenon all over the world. Therefore, thinking deeply on
how to make a modulation on the rural industrial structure and how to start,
economically, the re-development of the rural area have globally become the
most important issue to maintain the sound rural development.

An ATP, at the Huashan area in mid-Taiwan, was selected as our illustration
in this study. First, discussion and analysis on the whole environment of Taiwan's
rural area and the ATP were carried out via information collection, case study
and Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis.
Strategies toward the local sustainability development were also proposed.

INTRODUCTION

In the formerly rural society with a ‘self-sufficient’ supply-demand characteristic,
agriculture was the significant industrial activity in the rural area. It provided the
residents with the basic daily necessities. However, the transition of the social and
economical environment, the diminishing of the importance and the continuous
low profit of the agricultural production have prohibited the agricultural activity
from supporting the long-term development of the rural area in Taiwan. The
transition of the era has resulted in gradually changing the original characteristics
of traditional rural villages. Along with this, the impact of urban development
in the rural areas, gives rise to problems that can no longer be resolved by mere
agricultural production or technological innovation like earlier. Even though the
government has been successively proposing several policies, such as Produce
Price Subsidy, Farmer Subsistence Allowance, Farmland Release Program and
so forth, in order to resolve the crisis of the rural development, the financial
subvention policy is unhelpful to the perspective agricultural development in
addition to becoming a financial burden to the government. It still cannot solve
the fundamental problems of the rural area efficiently. The Farmland Release
Program, perhaps, can gain people’s common consensus, but only when it is
carried out with an integrated scheme. Exploiting farmland not only endangers
its role of ecological conservation, but it also disobeys the nation’s substantial
development perspectives (Landes 1998).

Rural development cannot be identified with the competitive vending situ-
ation of the agricultural productions in the exchange market; the economical
development can only be one of all the parts of the rural development. If the
rural area is parted from society, culture, ecology and other aspects, it will become
fragmented. Even though Rondinelli argued that ‘the rural development cannot
be carried out independently outside the city and that agriculture needs to grow
up together with both industry and commerce to solve agricultural problems’
(Rondinelli 1983), rural development should be structured in the interplay among
production, living and ecology due to the difference of the value system and the
lifestyle of the industrial society. This structure serves as a comparison to the in-
dustrial civilization. For this reason, the transformed rural area is different from
the consumption pattern in the capitalist society and thus, will lead a new notion
to satisfy the modern human kind’s needs (Saraceno 1994). Agriculture has always
been the driving force to the economical development in Taiwan. At present,
Taiwan is making a transition from a developing nation to being a developed
country. Although Taiwan is a small territory on which towns and countries
have frequent interactions, agriculture is facing a crisis due to the change of the
socio-economic environments. Furthermore, in comparison with the city, the
development of rural area is lagging. The idea of the interaction between towns
and cities emerging from the concept of ‘rural area with agriculture and city with
industry and commerce’ becomes unable to solve the problems that Taiwan’s rural
area is facing nowadays. Taiwan’s government has always proposed the strategy
of considering ‘the balanced development of production, living and ecology’ to
proceed farmland’s use, and expected the substantial continuity of rural area.
However, it was only announced and has not been implemented so far. In order
to fulfil the sustainable use of farmland in the future, the concrete, abstract and
development direction of the construction of Taiwan’s rural area becomes the
target of this research (Li 1997; Shih 1999).

Agricultural transformation, the way to use farmland and the promotion of
a diverse development of the rural industry are important, respectively, to the
sustainable development in the rural area (Libby 2000). For this reason, this study took the case study method and SWOT analysis to investigate an ATP—Taiwanese coffee at the Hua-shan area. Strategies for local sustainability development in the Hua-shan area were proposed with respect to the production environment, living environment as well as the ecological environment.

**RESEARCH METHOD**

Strategy planning is a systematic process of defining, creating, and managing the prospective scenario. This study incorporates strategic decision-making processes, proposed by Wheelen and Hunger (2001), to develop the research process, as shown in Figure 1.

**Figure 1**

Research Process

- Ascertained research range and content

<table>
<thead>
<tr>
<th>External Environment</th>
<th>Internal Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Investigate the integrative environment of Taiwan's rural area</td>
<td></td>
</tr>
<tr>
<td>2. Analyze the opportunities and threats of the external environment</td>
<td></td>
</tr>
<tr>
<td>1. Investigate the present situation of the production area of Taiwanese coffee</td>
<td></td>
</tr>
<tr>
<td>2. Analyze the superiority and weakness of the interior environment</td>
<td></td>
</tr>
</tbody>
</table>

Draft Strategy Elements (SWOT analysis)

Self-review and amendment those elements, then propose the ideas for the rural area’s planning

Production Environment  | Living Environment  | Ecological Environment

First, the procedure decides the research range and contents. Second, it analyzes Taiwan’s area and investigates the opportunities and threats of the external environment, and, subsequently, reviews the original place of production of Taiwanese coffee. This is done in order to realize the advantages and weaknesses of the internal environment, and proceed with SWOT analysis by choosing strategic elements for revealing the present situation in which Taiwan’s rural area is found.
It is also undertaken for self-review and amendment. Finally, the procedure drafts a reasonable multipurpose development direction for the rural area based upon the mentioned production, living and ecological environment aspects.

**EXTERNAL ENVIRONMENT ANALYSIS**

First, it is necessary to outline the development procedure of the rural area in Taiwan and also the transformation of the important policies in order to understand the evolution of Taiwan’s overall environment. It is then necessary to analyze possible opportunities and threats that cause the said evolution according to the present environmental situation.

**The development procedure of the rural area in Taiwan**

Forty years ago, the success of Taiwan’s agriculture helped establish a sturdy economical base for its people’s livelihood. However, since the 1960s, following the changes in the social and economic environment of the gradually diminishing agricultural-employed population and of the increasing business-employed population, the transformation of agriculture and rural area has become an inevitable phenomenon. According to each decade’s mean value of the Gross Domestic Production (GDP), as shown in Figure 2, agriculture had 28.77 per cent of the Gross National Product (GNP) in the 1950s, while industry had only 24.13 per cent of the GNP. However, until 1960, industry’s GNP for the first time exceeded agriculture’s GDP. From this period, as shown in Figure 2 agriculture’s GNP gradually reduced, while industry’s gradually increased. Furthermore, based upon the structural change of the employed population, as indicated in Figure 3, more than half of Taiwan’s population in the 1950s constituted of farmers, but this proportion was gradually diminishing. In the 1980s, the agricultural population did not reach the one-fifth of the general employed population and nowadays it becomes less than 10 per cent. Therefore, from each decade’s mean value of the GDP and the change of employed population, it is obvious that the economically development mode of the domestic industry has transformed from agricultural to the business basis.

If we further analyze the change of socio-economic environment in the rural area, we find that the agricultural family and population in the 1950s was 43.39 per cent and 50.09 per cent respectively of the general family and population. This proportion reduced by around 1 per cent each year until the 1990s, when it dropped to 12.94 per cent and 17.77 per cent respectively, as shown in Figure 4. Regarding the agricultural full-time and part-time agricultural family, there was not a big difference in the proportion between them in 1960; each of the categories occupied around 50 per cent of the general agricultural family. However, the
Figure 2
Percentage of Each Industry’s Gross Domestic Production in Taiwan

<table>
<thead>
<tr>
<th>Period</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Commerce</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952–1961</td>
<td>28.77</td>
<td>24.13</td>
<td>47.14</td>
</tr>
<tr>
<td>1962–1971</td>
<td>20.29</td>
<td>32.93</td>
<td>46.77</td>
</tr>
<tr>
<td>1972–1981</td>
<td>10.43</td>
<td>43.5</td>
<td>46.07</td>
</tr>
<tr>
<td>1982–1991</td>
<td>5.59</td>
<td>44.5</td>
<td>49.91</td>
</tr>
<tr>
<td>1992–2001</td>
<td>2.9</td>
<td>35.58</td>
<td>61.52</td>
</tr>
</tbody>
</table>

Source: CoA 2003.
Figure 3
Percentage of the Employment Population in Taiwan

<table>
<thead>
<tr>
<th>Period</th>
<th>Agriculture</th>
<th>Industry</th>
<th>Commerce</th>
</tr>
</thead>
<tbody>
<tr>
<td>1952–1961</td>
<td>52.7</td>
<td>18.89</td>
<td>28.41</td>
</tr>
<tr>
<td>1962–1971</td>
<td>43.45</td>
<td>24.26</td>
<td>32.29</td>
</tr>
<tr>
<td>1972–1981</td>
<td>26.52</td>
<td>37.47</td>
<td>36.01</td>
</tr>
<tr>
<td>1982–1991</td>
<td>15.74</td>
<td>41.6</td>
<td>42.67</td>
</tr>
<tr>
<td>1992–2001</td>
<td>9.75</td>
<td>38.06</td>
<td>52.2</td>
</tr>
</tbody>
</table>

Source: CoA 2003.
full-time agricultural family was always found in the minority situation, while the other became the main element of the development structure of Taiwan’s agriculture, as shown in Figure 5. They were shown that the importance of agriculture in the rural area has been gradually declining and, nowadays, rural areas are no more identical. The profession of the agricultural population is not only within agriculture, but also in industry and service trade. It is to say that in the present day the countryside with the co-existence of agriculture, industry and commerce, has replaced the traditional one focusing exclusively on the agricultural production.

Even though the importance of agriculture in Taiwan has been slowly diminishing, over the years Taiwan’s government has never stopped undertaking the reformation of the rural area and improving the farmer’s productivity. But the rural construction has never run faster than the urban development so that the difference between town and country has become bigger. However, unbalanced development between the urban and rural area here in Taiwan show that the economic activity difference is the main reason. Furthermore, the rural industry now focuses on the diversification of agriculture, industry and commerce, so it is hard to develop the rural area while only depending on the government’s construction measures. The rural policy should be changed by catering to the transformation of the rural industry and for the trend of the globalization.
The policy transition of the rural area in Taiwan

During the early period, the rural construction policy focused mostly on the integration of the production structure, such as the release of public land, land-to-the-tiller movement, farmland rezoning and so forth, but it did not put equal emphasis on the improvement and the establishment of the rural production and residents’ living environment until 1970. Hence, Taiwan started to carry out the related plans about the rural construction from 1970. According to each period’s differences, this research categorizes the plans into three main steps and studies the actual situations, the expected goals, the important executive policies and the deficiencies of the enforcement in each step as the following:

Equally emphasis on agriculture and industry (the 1970s)

1. Situation: agriculture has been losing its importance in the economic structure, thus causing the more obvious deference between the rural and urban development.
2. Main goals: (i) to enhance the agricultural production, to increase the agricultural profit and to raise the farmer’s income, (ii) to improve the environment of the rural production and the inhabitation, and to enrich the rural welfare service.

Source: CoA 2003.
Raising Rural Area’s Superiority in Taiwan

3. Important policies: (i) The Executive Yuan issued ‘the important measures to enhance the rural construction’. (ii) The Executive Yuan checked and ratified ‘the proposal of raising the farmer’s earnings and of strengthening the rural construction’. (iii) Council of Agriculture made ‘the proposal of the establishment of the illustrative village of integrated development’.

4. Deficiencies: the policy in this period still focused directly or indirectly on assisting the industrial development. Therefore, this policy caused the insufficient investment in agricultural development and the low income of the farmer. Furthermore, the rural construction in this step only reached some partial effects.

Innovation and adjustment (the 1980s)

1. Situation: (i) the rural area was short of adequate planning and this resulted in a messy living environment and therefore affected the living quality, (ii) while the government was advocating globalization and liberalization, the domestic agriculture was gradually facing the competitive pressure. The agricultural management became more and more difficult and meantime the farmer was suddenly losing the confidence in investment and production.

2. Main goals: (i) to improve the rural environment, to increase the farmer’s benefits and to shorten the difference in income between farmers and non-farmers, (ii) to enhance the rural development and to combine the infrastructure construction and the agricultural development scheme, (iii) to undertake the community development, the farmhouse construction and the landscape proposal.

3. Important policies: (i) The Executive Yuan checked and ratified ‘the five-year plan of the farmhouse improvement’. (ii) The Executive Yuan propelled ‘the proposal of enhancing the infrastructure construction and raising the farmer’s income’. (iii) Council of Agriculture announced ‘the proposal of improving the agricultural structure and raising the farmer’s income’. (iv) The Executive Yuan enacted ‘schema of enhancing the rural construction policy at the present stage’, undertaking ‘the improvement plan of the farmhouse and the rural environment’, ‘the plan of bettering the community environment of the agricultural and fishing villages’ and so forth.

4. Deficiencies: (i) Because of the continuous emigration of the population in the rural area, the rural construction and public works might probably not conform to the investment returns, (ii) Affected by the increasingly powerful materialism and individual desire of success, the rural people were psychologically attracted toward city life and ignored the construction of the hometown, (iii) Taiwan was facing the deteriorating environment of the
agricultural production, the decay of the competitiveness of the agricultural products and so on.

**Toward a better production, living and ecological environment (from the 1990s till now)**

1. Present situation: agriculture has been facing unprecedented challenges: the worse production environment, the lack of manpower, unreasonable land use, the pressure of economical liberalization, the decay of the competitiveness of agricultural products and the various demands that the consumer has for the agricultural products. Agriculture in Taiwan has become a minority industry and the farmer has become part of the minority group.

2. Main goals: (i) the development of Taiwan’s agriculture urgently needs to adjust its role to a balanced development focusing equally on the agricultural production, the farmer’s life and the rural ecology, (ii) to increase the extra value of the agricultural products and then to enhance the competitiveness of the domestic agricultural products, (iii) to protect the country’s culture, to improve the rural living environment, to raise the farmer’s benefits and to shorten the difference between city and country, (iv) to keep levelling between the agricultural production development and the ecological environment, to assure the sustainable use of resources, to strengthen afforestation and to develop sightseeing ranches, (v) to enterprise the agricultural production, to propel living modernization and ecological environment, and also to promote the integral development of agriculture, (vi) To emphasize ‘bottom-up, local autonomy to efficiently make use of the local resources and to keep the style and features of the rural area’.

3. Important policies: (i) Council of Agriculture transacted ‘the planning and construction of the comprehensive development of the rural area in mountainside’. (ii) Bureau of Housing and Urban Development took over ‘the integrated planning and construction of the agricultural and fishery villages in the level ground’. (iii) Council of Agriculture propelled ‘the planning of constructing splendid farming and fishing villages’. (iv) Council of Agriculture propelled ‘the rural area with new features planning’.

4. Deficiencies: in the process of rural planning or recreational agriculture development, the cultural characteristics of the local industry are always ignored. Some sightseeing facilities or commercial activities inharmonious with the environment are on hold, thus causing deforestation phenomenon, destruction exploitation model of the original terrain, such as theme park, holiday village, beer house, motel and so on which can be found in every area.
Opportunities and threats to the rural area in Taiwan

By exploring the development process and the important political changes in Taiwan’s rural area, the whole external environment was investigated to understand all the environmental structure and features, and also to understand further the opportunities and threats caused in the rural area in Taiwan. This paragraph applies this procedure and finds out various key opportunities and threats in Taiwan’s rural area.

Opportunities

O1. Recently, the central and local governments have been putting emphasis on the development in the agricultural area and, thus, have been eager to propel the infrastructural construction, and to enrich agricultural and sightseeing resources. They have also cooperated with the culture development in communities to promote rural development and to mould the rural village as an area with characteristics of delicate tourism, high quality residence and localized culture.

O2. According to the revision of Taiwan’s Agricultural Industry Development Regulation and the execution of the related policies, the farmland area in future will be reduced, and can be bought and sold with freedom. The utilization of agricultural and non-agricultural lands will become more diversified.

O3. With the efforts of Taiwan’s Council for Cultural Affairs, professional groups and individuals, the idea of Community Empowerment has been deep-rooted in each area. The future will become the period in which the area resource will be arranged in the bottom-up manner.

O4. According to the studies, the frequency of the individual domestic tourism in Taiwan has been increasing every year and people in Taiwan have put more attention in the leisure activities. This will propel the population of the rural area to develop with efforts the local industry and tourism.

Threats

T1. The freedom of farmland use becomes unlimited, causing improper land exploitation and the problems on the ecological conservation.

T2. In addition to the fact that the rural area lacks proper plans, people establish the same facilities and ignore the characteristics of the local industrial culture, thus resulting in the sameness of agricultural products.

T3. When Taiwan joins the World Trade Organization (WTO), the domestic agricultural products will face threats because the traditional production...
method will not compete with those of other countries in which the production costs are low. For this reason, agriculture in Taiwan needs an urgent transformation.

**INTERIOR ENVIRONMENT ANALYSIS**

The following paragraph focuses mainly on an ATP and also, on an important production place of Taiwanese coffee—Huashan area in Gukeng Shiang, Yunlin County. Its natural resource, human ecology, and the present situation of the land use were investigated to realize the main characteristic.

**The present situation of the ATP**

Gukeng Shiang, Yunlin County, is located in the southeast of Yunlin County and with the broadest territory and the most mountainous landforms in Yunlin County. Furthermore, the Huashan area is located in the southeast of Gukeng Shiang, forming an important entrance to the mountainous area. In Figure 6, the main studied area, Huashan area, is marked in blue line.

Although this area was affected seriously by 921 Gi-Gi Earthquake with a magnitude of 7.3 (on the Richter scale), and was threatened by Debris Flow, it has been gaining fame for “Taiwanese Coffee”, thanks to the efforts of the government organizations and the local groups. However, the integrated construction of that district lacks its own characteristics and visions that the Huashan area should have. Following is a brief introduction to the studies on the natural resources, the human ecology and the landscape features in the Huashan area.

**Natural resources**

The natural resources can be divided in terms of geography, climate and animal/plant ecology. The introduction is as the follows:

1. **Geography**: the topography in Huashan area is full of mountain slopes at an altitude between 200 to 1250 meters. The mountain ridges and rivers are approximately in the east–west direction and the soil is mainly colluvial.
2. **Climate**: this area has a perennial mild climate. It is good for crop production, human health, leisure activities and summer holidays with annual mean temperature of 22.8°C, annual mean relative humidity of 83.2 per cent and rate of sunshine being 35 per cent.
3. **Animal/plant ecology**: the animal ecology in this district can be divided into terrestrial and aquatic animals. As for the plant ecology, only in some
Figure 6
Location Map of Huashan Area

areas can it be found as the more typical natural secondary forest due to the premature reclamation in this area.

**Human ecology**

It embraces the distributions of the population and the villages, the peculiar organizations and activities in that locality, the land use and the industrial development.

1. Population and villages: although village distribution in this district appears irregular, it does not belong to a scattered pattern. According to the information provided by the local office about the level of education in the area in 2002, the elementary level of education is 51.2 per cent—occupying a high percentage; the secondary is high school level which has 38.8 per cent, (as indicated in Table 1). Distinguishing by profession, it is found that agriculture has the highest percentage, i.e., 55 per cent which reveals that the area is mainly formed by agricultural population (as shown in Table 2).

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Statistical Table of Educational Level in Huashan Area (in percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Level</td>
<td>College or Above</td>
</tr>
<tr>
<td>Percentage</td>
<td>6.4%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Statistical Table of Profession in Huashan Area (in percentage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profession</td>
<td>Agriculture</td>
</tr>
<tr>
<td>Percentage</td>
<td>55%</td>
</tr>
</tbody>
</table>

2. Organizations and activities: the farmer’s organizations in this locality are ‘Gukeng Shiang Farmer’s Association’ and ‘Taiwan Yunlin Irrigation Association’. The community organizations are ‘Huashan Community Development Association’, ‘Huashan Recreation Industry Association’, ‘Ta-Hu-Ti Culture Work Station’ and so forth. They always hold big celebrations in this area every September and every March of the lunar calendar. Furthermore, in the recent years, the government has been holding ‘Taiwanese Coffee Festival’ in the Huashan area, which attracts a lot of tourists.
3. Land use and industrial development: this area is mainly the steep land conservation area in which private and public territories occupy half of the whole area. The industry of this locality, in the early times, focused on betel palm, bamboo and tea leaf. However, following the economical growth and the agricultural transformation, a large amount of coffee has been planted in the recent years; coffee of this locality thereby gained fame. In addition, other agricultural products include red dragon fruit farm, mushroom farm, orchid cultivation and edible wild herbs cultivation.

Landscape characteristics

In respect of the landscape characteristics, it can be divided into soil and water conservation, ecological conservation, cultural relics and residential environment:

1. Soil and water conservation: the landform of this area is mountainside and the most part of the place has already been reclaimed, so the soil and water conservation has become extremely important. In order to reduce the soil loss problems, the agricultural cultivation is mostly operated in the way of building masonry walls, which has become one of the characteristics of the locality. However, there are still a lot of structures made of concrete, which destroys the principles of ecology, forestation and beautification.

2. Ecological conservation: the primitive tree types have been replaced by the planting industry and the monotonous tree type resulting from this has caused the monotony of the habitats of the living creatures. This has discouraged the growth of diverse animals and plants.

3. Cultural relics: following the change of time, the material use, traditional building pattern and human landscape have also changed. The traditional farmhouse made of tiles and bricks, known as San-Ho-Yuan, have been replaced by the reinforced concrete-made buildings. Due to this change, the local features have been fading away gradually.

4. Residential environment: due to the rapid development in this area and the lack of proper plans, the signboards of the stores are not set up properly, and street vendors randomly occupy the streets. These destroy the order of the street landscape, sense of the beauty and characteristics in the locality.

The superiority and weakness of the ATP

Case analysis was used to discover the basic characteristics and the local features of the ATP and to find out, at the same time, the superiority and weakness of the place. According to the results of the mentioned observations, conclusions were made and these were divided in two parts, superiority and weakness.
Superiority

S1. The topography of this area varies a lot and it has beautiful scenery and a broad natural ecology. It has also become an excellent place for mountain-climbing and for studying natural ecology.

S2. It has been planned to develop leisure and organic farms, coffee production and so on in this area, and, thus, leading this area toward a positive transformation in terms of industrial development and the creation of diversity of the rural environment.

S3. The local groups have already conserved the local culture—such as the long-standing coffee culture, as well as handmade paper works. They have also kept the cultural rural relics.

S4. This locality embraces rich human resources, such as temple festival activities, community groups and so on. This has an absolute influence upon the local cultural conservation and the area’s development.

S5. The area is mostly mountainous and has plenty of tourist destinations, such as Huashan scenic area, Tsao-Ling scenic resort, Jhang-hu scenic area and Janfusun Fancy World.

S6. The qualities of the roads in this area and the road system for external communication have been always in a good condition.

S7. Since the farmer is more willing for afforestation, the government actively propels the example of afforestation in the hope of restoring the scenery of the past as soon as possible.

S8. The private and the public territory occupy around half of the whole area. It is possible to include the public territory as a reference for the place for the election of big public facilities.

S9. In this area, a lot of spectacular facilities for the Debris Flow reconstruction work are established, such as check dam, rock protection fence and so on. If they cooperate with the natural landscape, this area will become one of the scenic spots for educational resources and prospective tourist development.

Weakness

W1. Plenty of betel palms was planted in this area, which threatened its natural landscape and environment.

W2. In the past, the local industry focused on betel palms and Chinese tea, but the price of these products has been falling because of excess production. The diminishing price of these two products has caused a negative impact on the economical source of the local residents.

W3. Although the machines and farmhouses of the traditional industry in the area are conserved, the maintenance condition is not good. This could
affect the execution of invigorating the traditional industry and tourism in future.

W4. The local personnel training and education training have not been propelled as well as it was expected. This will become an obstacle for the locality to step toward the sustainable management in future.

W5. There are abundant tourist resources in this area, but an integrated tourist plan is still underway to mutually cooperate with said the available resources.

W6. There are no detailed indicator signs on the roads which has caused a chaotic traffic nearby and confused the tourist's sense of direction.

W7. The public facilities in the area, such as medical and service facilities, are seriously insufficient to provide a high-quality tourist space.

W8. The territory is mostly used as farmland and the problems of the soil and water conservation merge easily as a result of excess forest reclamation.

W9. With increasing mountain-climbing tourists and the rising needs of non-agricultural lands, there could be excess exploitation and destruction of soil and water resources.

**SWOT Analysis**

Strategy planning is a system method that manages changes and creates the best possible future. Through the SWOT matrix analysis, the exterior opportunities, threats, interior superiority and weakness for the ATP can be reviewed and can also be used to find the relationship between them to draw up a reasonable responsive strategy to the rural comprehensive development. The drafted strategies are concluded in Table 3.

**Strategies based on the investigation of the ATP for creating high quality rural village**

According to the results of the SWOT matrix analysis, as shown in Table 3, the integrated proposal about the ATP was reviewed and revised. Also, from the production, living and ecological environment, their present situations and strategies were concluded.

**Production environment**

**Present situation**

The two major economical products—betel palm and Chinese tea, are facing operational difficulties because of an excess betel-palm production, decreasing
### Table 3
SWOT Matrix Analysis

<table>
<thead>
<tr>
<th>Interior Environment</th>
<th>Superiority (S)</th>
<th>Exterior Environment</th>
<th>Weakness (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Natural ecology is plentiful.</td>
<td>W1</td>
<td>The superficial contents of planting betel palm are broad.</td>
</tr>
<tr>
<td>S2</td>
<td>To actively develop leisure, organic farm and coffee industries.</td>
<td>W2</td>
<td>The betel palm and tea leaf industries are gradually declining.</td>
</tr>
<tr>
<td>S3</td>
<td>The old historical relics of rural area are preserved.</td>
<td>W3</td>
<td>The machines and farmhouses of the traditional industry are under bad maintenance.</td>
</tr>
<tr>
<td>S4</td>
<td>Human resources are abundant.</td>
<td>W4</td>
<td>The job of fostering professionals is insufficient.</td>
</tr>
<tr>
<td>S5</td>
<td>The tourist resources nearby are quite rich.</td>
<td>W5</td>
<td>The planning of tourist schedule is not integrated.</td>
</tr>
<tr>
<td>S6</td>
<td>The external transportation is convenient.</td>
<td>W6</td>
<td>Detailed indicator signs are short of.</td>
</tr>
<tr>
<td>S7</td>
<td>To actively propel the example afforestation.</td>
<td>W7</td>
<td>The public facilities in the area are insufficient.</td>
</tr>
<tr>
<td>S8</td>
<td>Some of the public territory can be used for the public facility construction.</td>
<td>W8</td>
<td>The problems of soil and water conservation and the destruction of soil and water resources are easily caused because of an excess exploitation.</td>
</tr>
<tr>
<td>S9</td>
<td>The Debris Flow reconstruction work can be mutually cooperated with the natural landscape.</td>
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<tr>
<td>Opportunities (O)</td>
<td>Solutions (SO)</td>
<td>Work Outs (WO)</td>
<td></td>
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<tr>
<td>O1 The great attention of people from every field and the execution of government's policies.</td>
<td>SO1 To enhance ecological environment conservation for the sustainable development of resources. (S1,S7,O1)</td>
<td>WO1 To pay much attention to the soil and water conservation in the area and to undertake the gradual afforestation plan. (W1,W8,O1)</td>
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<tr>
<td>O2 The use of farmland will be more diverse with Farmland Release Program.</td>
<td>SO2 To develop leisure agriculture and to promote the domestic tourism. (S2,S3,S4,S5,S6,O2,O4)</td>
<td>WO2 To take the resident’s opinion as the main and the professional’s as the auxiliary to create a new style of the rural area. (W2,W5,W7,O3)</td>
<td></td>
</tr>
<tr>
<td>O3 The bottom-up method will be applied in the future to strive for the local resources.</td>
<td>SO3 To combine each department’s plan to promote the efficiency of the integrative plan. (S2,S8,S9,O1,O2)</td>
<td>WO3 To apply the local tradition and cultural resources to mould the integrated style of the local countryside. (W3,O3,O4)</td>
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</tr>
<tr>
<td>O4 The coming of leisure era.</td>
<td>SO4 To provide the locally necessary resources according to the needs of the local residents to avoid unnecessary construction. (S2,S8,O3)</td>
<td>WO4 To establish work station and invite professionals to enter and work in. (W3,W4,O1,O3)</td>
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<td></td>
<td>SO5 To map out appropriate leisure field and teaching field, applying the local characteristics and to create the tour resources for the locality. (S6,S8,S9,O1,O4)</td>
<td>WO5 To better the local living environment and to increase the public leisure space. (W7,O1,O3,O4)</td>
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(Table 3 continued)
### Threats (T)

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<td></td>
<td>The farmland is excessively open for use and this would easily cause improper land exploitation and the problems of ecological conservation.</td>
<td>The rural area lacks plans, thus causing the agricultural products to become scanty of variety.</td>
<td>In the international market, the traditional agricultural products cannot compete with the countries in which the production costs are low.</td>
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<th>ST1</th>
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<tr>
<td></td>
<td>To cooperate with the government’s policies, undertaking the change and upgrade of the agricultural products, based upon the environmental conditions of the locality. (S2,S7,T1,T3)</td>
<td>To cooperate with the development of leisure agriculture, creating the particular industry of the locality. (S2,S5,T2)</td>
<td>To apply the rurally cultural relics and human resources, holding periodically particular activities and creating the characteristics of the local rural area. (S3,S4,T2)</td>
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<td></td>
<td>To cultivate other economic tree types or landscape tree types which are contributive to the soil and water conservation by replacing the downfalled agricultural products. (W1,W2,W8,T1,T3)</td>
<td>To establish agricultural product sales centres and to develop diverse marketing methods. (W1,W2,W7,T3)</td>
<td>Based upon the characteristics of the local rural area, to plan out completely and to conserve well the local cultural relics and farmhouses. (W3,W5,W6,T2)</td>
</tr>
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price, upsetting prospects and the quantity and quality of tea which cannot be raised. These reasons affect the farmer’s income and profits.

**Strategy**

1. To persuade the farmers to work on the delicate agriculture, such as organic vegetable and fruit, coffee and edible wild herbs
2. To propel ‘the notion of leisure farms’ with which to plant other high economical products by multi-storied cultivation or the plants for the forest tourism

**Present situation**

In the recent years, coffee drinking has been a trend in Taiwan. Such a trend has flourished the coffee industry in the rural areas. That coffee house and guesthouse industries are rapidly developing is becoming one of the characteristics of this area.

**Strategy**

Based upon the leisure agriculture, the local environment, industrial and cultural resources should be combined. Innovative use of the old resources and the exploitation of new resources should be adopted to develop tourism in this locality and, thus, to make coffee become the sustainable industry in the rural area.

**Living environment**

**Present situation**

With the coming of the leisure era, the rural area has been developing at high speed. However, since no plans have been drawn up, people of the local stores put their shop signs randomly in order to attract tourists. This causes the disorder on the streets and covers up the beauty and features of the locality.

**Strategy**

1. The professionals undertake the whole plan for the locality and set up a perfect tourist schedule and clear indicator signs.
2. The government adopts propaganda, awards and restraint to control the location of street vendors and draw up an appropriate place for them. Furthermore, the government tears down illegal signs and propagates the application of bamboo, wood, brick, stone and so on to make signs, thus to show the characteristics of the local environment and to promote the whole image of the locality.
Present situation
Buildings in this area appear monotonous, among which old and new buildings are inharmoniously erected. Some old buildings are already destroyed which not only hide the local features, but also destroy the whole landscape, and cause doubts on the public safety as well.

Strategy
To undertake the key restoration, and to propagate that the design of buildings should be in keeping with the country style. Besides, the local people can use the old farmhouses as guesthouses for tourists so that the visitors can get closer to the early rural life. This idea also offers a motive for the conservation of old farmhouses.

Present situation
The area lacks management and weeds and trash are found everywhere. This causes a negative influence on the development of the tourism. Furthermore, the environment of this area has not been completely made green and beautified, and the promotion of the resident’s living environment and tourist quality has not been concerned yet. This would raise obstacles to mould the integral characteristics of the area.

Strategy
1. To undertake a periodical environmental arrangement, planting trees, flowers and grasses to beautify the surroundings
2. Overall green construction and beautification (including roads, streets, yards and residences and so on) should be undertaken and protophyta, shrub and vine accompanied by grass and flowers should be used to gradually improve the crudity of the concrete construction and to beautify the landscape of the main roads and of the overall environment

Present situation
The spare space in the area is not used efficiently. Furthermore, the locality is short of repose space for the residents and tourists, such as meeting venues, parking lots and public bathrooms.

Strategy
1. Appropriate improvement of the spare space in the area should be carried out to increase venues for meetings and activities for the local residents and also to increase the public space for the tourists.
2. To reflect on the distribution of the tourist spots and activity situations, the location where public lavatories and parking areas are provided should
be assessed and more parking areas, public lavatories, interpretative signs, pavilions should be established for people’s convenience.

**Present situation**

Personnel is the most important resource for the development of a locality, so its importance cannot be ignored. However, the educational level of the people from the rural area is generally insufficient and thus fostering professionals becomes hard. The same situation also happens in this ATP area.

**Strategy**

1. To actively undertake the cultivation of professional elites, and to urge the residents to be concerned about the local stuff. Also, to guide the local residents to hold activities, which have the cultural characteristics of the locality.
2. To train the narrators of the locality and persons responsible for the ecological conservation and the environmental maintenance. Through narrations, propagations and other interactive activities the features of the local rural area can be appreciated by tourists. Exchange of experiences with other localities by mutual communication should be carried out to promote the prosperity of the area.

**Ecological environment**

**Present situation**

This rural area obtains abundant natural ecological environment and is very suitable for fishes, shrimps, fireflies, butterflies and other wildlings to stay and propagate. However, these precious resources are gradually diminishing as a result of the indifference of the conservation concepts and of the destruction of exploitation.

**Strategy**

1. To awaken people to strive for the conservation of the natural ecology by educational propagation, so that the man-made activities do not destruct the ecological environment.
2. To persuade people to complete the responsibility of supervision.
3. To establish various kind of ecological rehabilitation, and providing tourists with the opportunities for field observation and for experiencing the environment of the natural ecology.
4. Stream-control works should be carried out by natural methods so that the river ecology can propagate continuously.
Present situation
Even though the locality was ever affected by the earthquake and Debris Flow, the related authorities undertook the renovation construction by ecological engineering methods. The results of the renovation are quite fruitful.

Strategy
The renovation construction can be combined with the local environmental characteristics to make a resource integration of the local particular style and features of mountains and the characteristic constructions along the rivers, thus becoming an educational platform. This would provide the tourists with more understanding about the soil and water conservation and also enhance people’s concept of hazard precaution and prevention.

CONCLUSION
In order to construct a high-quality rural area, the production, living and ecology environments are necessary to be considered consistently. Some strategies toward these three aspects to achieve the local sustainability development were offered in this study, based on the investigation of the ATP–Huashan area in Taiwan. Although this research only applies the investigation of individual case, the individual case can, overall, show the present phenomenon of the countryside in Taiwan.

In the production aspect, the agricultural products should be changed or upgraded, and planted trees are necessary as they are economical and favourable to the soil and water conservation. It is indispensable to establish agricultural product sales centres and to develop diverse marketing methods to lead the rural area toward a prosperous future. In the living aspect, the traditional San-Ho-Yuan of the rural area in the early periods can merge with the scenic surroundings and furthermore, the streets are always circuitous and interesting. If these constructions are conserved properly, in addition to the improved surroundings, it is believed to be able to create a village image as well as traditional style and features, thus demonstrating adequately the characteristics of the locality. In the ecological aspect, the ecological problems such as river rehabilitation and sustainable resources are not short-term jobs. In order to head forward the sustainable development, in addition to applying the ecological engineering advocated by the government to create a habitation environment for the living creature, local construction and the natural resources can be combined to make the ecological resources become one of the main characteristics of the rural area.

With the wide spreading of the leisure activities, the prospective rural area can strive to become leisure countryside and to make use of the local resources build up the particular style and features of the locality. However, in order to promote
successfully the characteristics of the area, the participation of the residents in
the rural construction is primary and absolutely necessary. For this reason, the
cultivation by the professional elites becomes quite important for supporting the
development of the rural area.

Besides, the quality of the rural construction is highly affected by the interactive
relationship between the planning designers and the locality. So, while undertaking
public construction projects, the government also needs to ask for the local
residents’ opinions. They would then carry out activities based on the way the
residents participate while expecting to meet the needs of the locality.

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