

The Meaning of German Landscape Planning for Rural Sustainable Development

Chien-Zer Liu*

I . Introduction

II . Legal Basis of German Landscape Planning

III . German Programs on Ecological Environment Maintenance

IV . Meaning of German Landscape Planning for Rural Development

V . Conclusion

References

* Paper presented in Asia Productivity Organization (APO) Multi-Country Study Mission on Rural Life Improvement for Community Development, Taichung, Taiwan, ROC, 29 October – 7 November, 2003.

The Meaning of German Landscape Planning for Rural Sustainable Development

Chien-Zer Liu

I. Introduction

Rural village is not only the important base of agricultural production but also a conservation place of natural resources. The goal of rural development, in addition to the stress on rural economic foundation and upgrade rural attraction as well as living quality, is more important to sustain for natural landscape and ecological environment. Therefore, the scope of implementing rural development covers production economy, local culture, life improvement, natural conservation, and ecological environment. It must be also comprehensive, integrated, specialty, and sustainable. In order to improve economic conditions to raise rural living standard, rural construction is often considered as a useful tool for village modernization. However, apart from reaching modernization, the way to maintain village ecological environment in accordance with natural conservation and landscape maintenance is also important to complete the task of rural construction. There is often a sentence to describe rural construction in Germany: which is “Erbaute Heimat schoen oder kaputt?” (Does it beautify or destroy hometown under rural construction?). Mainly, it is to emphasize the importance of rural construction to rural landscape (rural ecology, culture, architecture, and historic sites), natural conservation, as well as landscape maintenance.

Following from the rapid development of industrial and commercial business, agriculture in Taiwan will not play an important role in economic aspect, and agricultural structure is gradually changed to sustainable development, upgrade welfare for farmers, and maintain natural ecological environment. In fact, rural reformation has been a popular trend for European countries; especially that Germany is the typical one. Although there are different characteristics or different policies of rural construction for Germany, generally it covers multiple dimensions. In the aspect of agricultural production, other than emphasizing on product marketing and ecological production, additional-value is upgraded from the dimension of development on rural tourism and landscape. From the aspect of living improvement, in addition to the stress on rural public construction and village renewal, the rural tradition and special local style are sustained to enrich the living content of the villagers. Moreover, it emphasizes more on ecological environment and natural

landscape to show the vital rural life and upgrade the rural tourism value for sustainable development. Therefore, to study on how to maintain ecological environment in the process of German rural construction is the important focus of the study. In the process of rural modernization, the natural landscape in rural area and its special style can be sustainable development to improve economic, living, and leisure value from increasing attraction.

II. Legal Basis of German Landscape Planning

After the first oil crisis in 1970s, Germany acknowledged the importance of ecological conservation and applied it to their land use policy. Therefore, the country promulgated “Federal Act about Preservation of Nature (BnatSch G) in 1976 to carry out “Green Resource for Next Generation” by natural ecological conservation under land use. This constitution set up perfect system for German eco-conservation and landscape maintenance with various policies. The legal basis, practices and efforts of German ecological environment are studied respectively.

A. Territorial Order Law (ROG)

Territorial Order Law (Raumordnungsgesetz, ROG) of Germany is different by administrative district and the nature of planning. From federal state to state, district, township and every level, there are legal basis to follow up, and the program of each level can be coordinated well and compensated with each other to form a solid and sound system. Figure 1 illustrates the system of Territorial Order Law and, the programming of natural landscape and ecological environment of Germany.

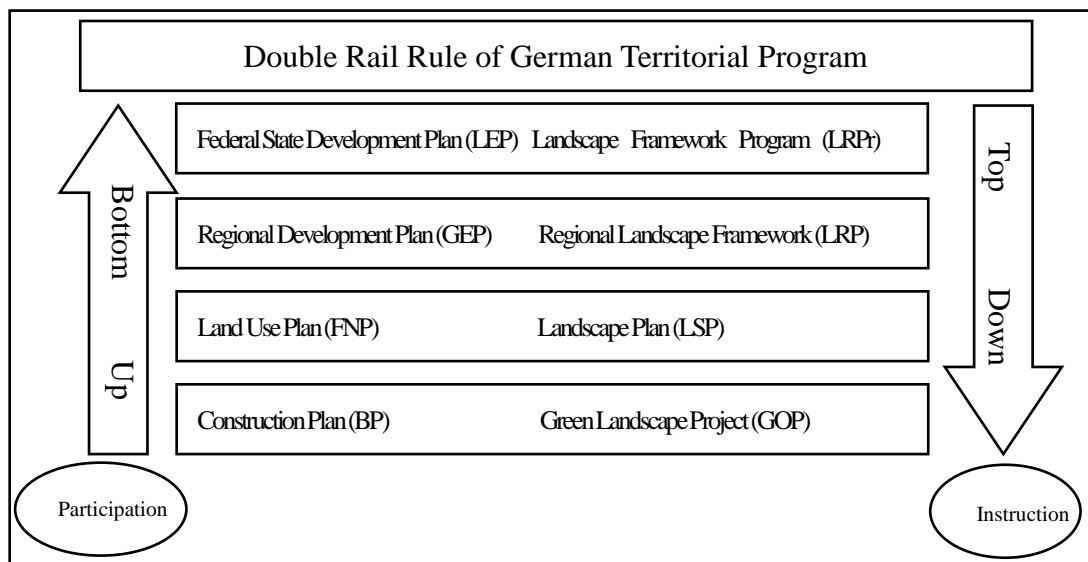


Figure 1 : Double Rail Rule of German Territorial Order Law

Source : Nolten, Ralf , 2004

(1)Federal State

German Federal Territorial Order Law (ROG), German Federal Territorial Order Project (ROPr), Federal Act about Preservation of Nature (BnatSch G) stipulated by Federal State are to layout the national population, industrial activity, public investment, and natural landscape as well as ecological environment maintenance for long-term criterion and instruction. The main purpose is to develop the personal potential, to maintain natural environment, to cherish land resources, and to promote balanced living conditions to match for all directional demands and integrated development.

(2)Landscape Planning at State Level

In accordance with Federal Act about Preservation of Nature (BnatSch G), each state established Landscape Act (LG) or Natural Conservation Act (NatSch G). Furthermore, the Landscape Framework Program (LRPr) was planned to guide the conservation natural resources conservation and maintenance of landscape environment.

(3) Landscape Planning at Local or District Level

The Landscape Framework Plan (LRP) is a plan to guide district natural landscape and environmental maintenance. It was stipulated to program of maintenance and development of the district according to the goal and policy of aforesaid Landscape Framework Program (LRPr). Moreover, in accordance with Article 5 of Federal Act about Preservation of Nature (BnatSch G), Regional Development Plan (GEP) also has the function of Regional Landscape Framework Plan (LRP). As a result, the goal of district natural protection and landscape beautifying specified in the program, can be elaborated to take district responsibility.

(4) Program at Township Level

1. Spatial Program

Carrying out the goal and principle of regional plan, the next plan for each township is Building Plan (BLP). Two plans are included: Land Use Plan (FNP) and Construction Plan (BP), which are the guideline for whole township land utilization and development.

Land Use Plan (FNP) is programmed to fit for township development in the future 10-15 years, and it is also a kind of preparing program of Construction Plan (BP).

Construction Plan (BP) has authorized power against all residents, and there are three

basic contents of this plan:

- 1) Road facilities: regularity necessary transportation facilities area and passage.
- 2) Greenland area: regularity for plants under protection and newly planted green land area.
- 3) Construction quality: regularity building materials, window and door type, architecture shape, floors, height and outlook, and roof bevel, etc.

2. Landscape Plan

Landscape Plan (LSP) is a counterpart plan of construction plan, and it must be matched to land use plan to fix up the ecological basis required by land use plan. Landscape plan is also the basis of township building area, in the aspects of natural landscape development and maintenance, district outlook beautification, and natural maintenance, etc.

Landscape Plan covers the description of current situation, assured goal of landscape development, and stipulation on the worthy protected landscape to coordinate with development, conservation and development policy. In order to achieve the goals of balanced ecology, natural landscape maintenance, the landscape plan is divided into basic part and development part. The basic part is to specify the basic current condition and the results of landscape analysis and diagnosis, etc. The development part includes local goal and policy to insure the spatial layout and function for all green-lands and green resources and to coordinate with the urban construction plan.

B. Federal Act about Preservation of Nature (BNatSch G)

German Federal Act about Preservation of Nature (BnatSch G) is to stress on the importance of maintenance on nature and landscape. The main protection object is the land, and extended to wildlife, plants, water, and air, etc. There are totally 5 chapters with 21 articles for Federal Act about Preservation of Nature, and in the first Article of 1st Chapter specifies the objectives of natural conservation and landscape maintenance. No matter of nature or landscape that people gathers area or not should be protected, preserved and developed. Thus, the important elements of living basis and leisure function for human beings are: (1) Natural Productivity; (2) Natural Utilization; (3) Plants and Animal life; (4) Nature and landscape could be insured lasting for diversified, unique, and beautiful scenery.

“Natural Productivity” means a stable ecological system, and the great nature operates long lasting. “Natural Utilization” means that mankind can utilize various natural resources. While the diversified, unique, and beautiful plants and animals, nature and landscape are sustainable for the basis of natural living. The goals of

natural conversation and landscape maintenance are to protect, conserve, and develop those important elements.

The goals of protection and preservation can be implemented through some certain policy or orders, for example: establishment of the various wildlife conservation areas or wildlife operation management. Development is the more progressive activities, for example: (1) maintenance and rebuilding of nature and landscape, such as: the damaged landscape restoration; reforming the forestry; repairing of ditches and canals; and maintenance of the coastal bank; (2) setting up new equipment and facilities, such as: reforestation, exploiting of stream and rivers; digging of lake or pond; establishing animal habitats, etc.

The second article of Federal Act about Preservation of Nature is to follow the first article's objective to specify the importance of the conservation of nature, and its important points are: (1) to protect, conserve, and develop for an everlasting nature, especially for animals, plants, habitats, and the whole ecological system. (2) to utilize carefully the renewable natural resource with self-supportive renewal ability; (3) to protect, conserve, and develop the landscape for people's living and leisure.

Nevertheless, the article 5 of Federal Act about Preservation of Nature is to manifest Landscape Framework Program (LRPr) and Regional Landscape Framework Plan (LRP) that is beyond local requirement and policy. The goal of natural conservation and landscape maintenance is carried out under consideration of spatial order and principle of state programming. The article 6 of Federal Act about Preservation of Nature stipulates that in the landscape plan, in order to implement the goal of conservation of nature and landscape maintenance, local requirement and policy is only based on the requirement of conservation of nature and landscape maintenance. But the characters, diagram illustration and other reasons enclosed must be specified in details. Finally, in the article 7 of Federal Act of Preservation of Nature, it manifests directly with appropriate effectiveness for the liability of each state to promote landscape programming, and to implement the goal and principle of natural conservation and landscape maintenance stipulated in article 1 and 2 of Federal Act about Preservation of Nature. When programming on landscape project and plan, every state must follow the article 5 and 6 of Federal Act about Preservation of Nature and notice not to increase difficulty for nearby state and integrated federal state. In order to carry out the requirements of federal state, the appropriate regulations or applicable rules shall be promulgated to meet the regulations of federal state.

From above various objectives, principles, policies that manifest in Federal Act about Preservation of Nature (BnatSch G), and under such a clear legal basis for natural environment protection and landscape maintenance, Federal Act about Preservation of Nature takes the responsibilities of conservation of nature by means of

landscape planning in the process of land utilization.

C. Ecological Account

The most important duty of land use planning is to build up the following ecological account:

- The most important regulation of Federal Act about Preservation of Nature is to reserve at least 10% of whole area as habitats for creatures during the land development. By means of ecological corridor (such as: streams, rivers, or roads, etc.), the space of habitats can be coupled effectively to form living space of creatures into network system.
- The regulation of balance policy in Federal Act about Preservation of Nature: if there is any natural resources damaged during the process of land use planning “ecological account” shall be established. That is with mode of homogeneous quality and equivalent quantity, it is necessary to build green land at other places for compensation. By means of double win on land utilization, the green land space and ecological environment can be maintained effectively.

Construction of freeway or speedy railroad (ICE), and its balance policy is required at least 100% compensation. Even the compensation rate is higher to be 1:25, that is to exploit the area of public construction 100 ha for the construction of freeway or high speed railroad, then there is at least 250 ha green land needed to expand for compensation. Figure 2 is the destruction against ecological environment and simultaneously adopts the policy of compensation to build up creatures habitats surrounding the railroad, in order to avoid the negative influence from construction of high-speed railroad in Germany. It is expected to reduce the impact against ecological environment under construction of big-scaled public facilities.



Figure 2 : Ecological compensation example of German high speed railroad from Koeln to Mainz.

III. German Program on Ecological Environment Maintenance

Traditional village refers to the agriculture and forestry oriented rural area including fields for production and villages for living. Below is the ecological environment planning of German rural areas, and there are two parts specified in details including field and community aspects.

1. Field Aspects

(1) Ecological green network

The most important measure to rebuild the rural ecological environment is programmed by government with nationwide green network system. Through land consolidation, the government purchased farmland to reform it into green belt, swamp,

wetland, forest, and grassland, and even encouraged to set-aside and extensive farming to reduce the interference made by human factors. At the meantime, those green lands are coupled into ecological corridor to suit for movement of the creatures, and then furthermore, they were connected together to form a protected area of nationwide ecological network system. This not only restores diversified ecological environment but also improves the landscape of rural village. Even more, the leisure and traveling industry will be led to improve the rural economy.

Under farmland utilization not to be interfered, government or local folk purchased the farmlands for consolidation to couple the most potential green land into green network system. The programming of bio-ecological green network system (Biotopvernetzungssystem) was usually constructed by (1) river passage greenbelt (2) hedgerows (3) forest mixture between cultivating land (4) wild grassland on both sides of road, and (5) ecological retention pond, etc. By specifying as follows:

1. River passage greenbelt

To reserve and create the both sides of river passage, the diversified bio-ecological environment cannot only be restored but also prevent the water resources being polluted from chemicals and fertilizers.

2. Hedgerows

In addition to be a cultivating land and boundary to prevent soil alluvium, improve farmland climate, hedgerows can be provided for movement passage and habitats for the creatures. In the past, the farmland did have many hedgerows that were used for boundary line and windbreak, and those hedgerows not only were the movement passage for animal and birds but also prevented soil erosion, wind harm and climate improvement.

3. Forest mixture between cultivating land

There were many grassland, shrub, mixed forest tree in the rural area. Often in the mixed forest, there are varied plants, like wild grass, shrub, stately tree, and resulting in diversified environment of bright, dark, dry, and wet to provide the habitats for all creatures. Furthermore, it can soften the raining flow to prevent soil and nutrition from being lost.

4. Wild grassland on both sides of road

German rural green network system is programmed the certain width of farmland on both sides of the road as hedgerows or shaped wild grassland, and even to stipulate that set-aside grassland must be left as could as possible for habitats purpose. Therefore, the gas waste, tire dust, etc. can be reduced to benefit for the growth of the crops.

5. Ecological retention pond

There are many regulated ponds often seen in German rural villages, and the depth of those ponds is different for its varied ecological environment. There are full of creature chain. The planning of rural ecology was through farmland consolidation by purchasing the farmland as for the pond land, and then it was changed to be natural bank.

(2) Ecological bridge

The purpose of ecological bridge is to minimize the impact of public infrastructures against natural environment. Especially when helpless transportation plan needs to break into the habitats, the road type and structure has to be changed to minimize the possible impact against the ecology. In short, when digging the mountain is necessary, it has to change with channel type (refer to Figure 3) to keep original land condition and keep the maximum movement area for the creatures. On the contrary, if in the area that needs to fill up huge volume of the soil, then overhead bridge is the way to adopt (refer to Figure 4) to let creatures free for movement without threatening by transportation car.

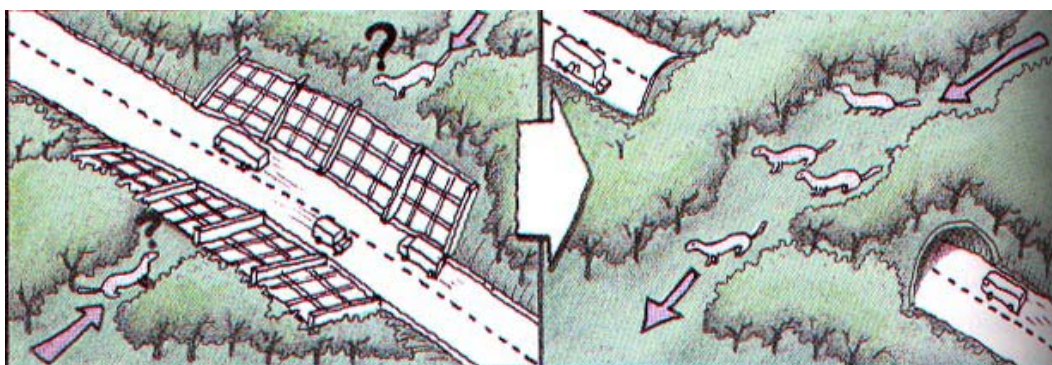


Figure 3 : Ecological sensitive area is braked through by channel.

Source : Lin, Hsien-Te, 1999.

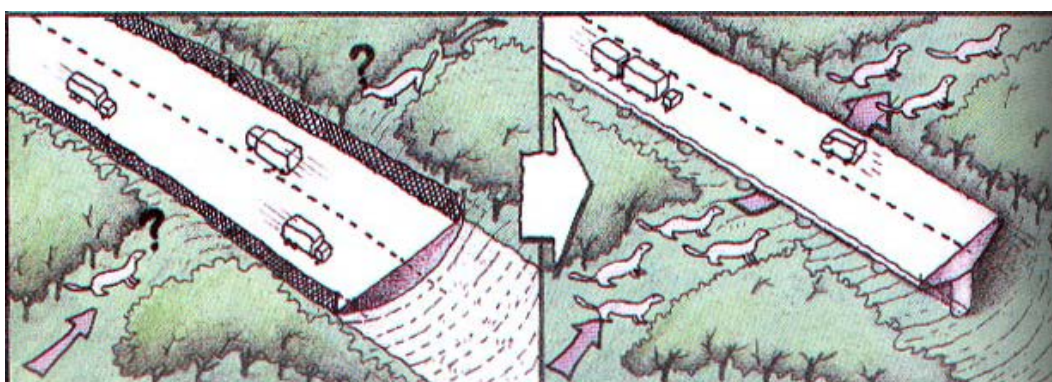


Figure 4 : Illustration of bridge passing through ecological area.

Source : Lin, Hsien-Te, 1999.

German Radolfzell-Markelfingen area, programming under natural ecological environment, ecological bridge was set-up, (refer to Figure 5) to connect the separated, greenbelt on the federal state roads. It provides the safe habitats for the creatures and minimizes the possible impact against habitats environment.

Theoretically, any development of mankind is a damage behavior against natural ecological environment. While, under the premise of sustainable development, a limited development is therefore allowed. Refer to the aforesaid description; German mitigation for ecological account is the way to control for ecological environment. What's the meaning of mitigation, it is for mankind to adopt soft and compensation policy against negative influence of human beings activity. Also, it is the confirmed system for assessment on environmental impact.

Generally, the system of mitigation can be divided into three kinds: "Avoid" "Minimize" and "Compensate". "Avoid" is to review the site necessity of the development project or other replacement site possible (refer to Figure 6). "Minimize" is when it is unavoidable to review the minimized steps. Finally, "Compensate" is to assure that the construction unavoidable damage against the ecological environment, the way of compensation must be adopted (refer to Figure 7). The "mitigation system" provides the compensation for environmental loss. For example, the habitats of wetland for *Numenius arquata* was separated because a road construction necessary outside of Munich, Germany. Therefore, farmland of 44 ha surrounding was purchased to reform into wetland to compensate the loss of ecology.

It is the liability for German public constructions to minimize the influence against natural environment. Like the aforesaid description on Figure. 2, the compensation case for German high speed railroad construction from Koeln to Mainz. After two years of ecological restore programming, the natural environment comes back. There was total land area of 708 Ha needed for high speed railroad construction, and the land required for construction was 35%. While, the rest 65% land area was applied for ecological maintenance purpose to create the habitats for the creatures.



Figure 5 : Radolfzell-Markelfingen (Germany) ecological bridge lets animals across freely.

Ecological preservation area

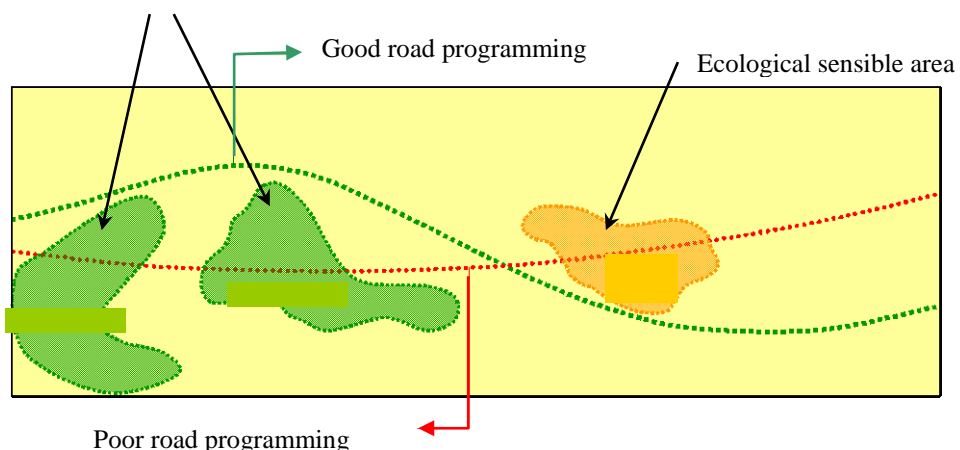


Figure 6 : Illustration of road programming to avoid habitats.

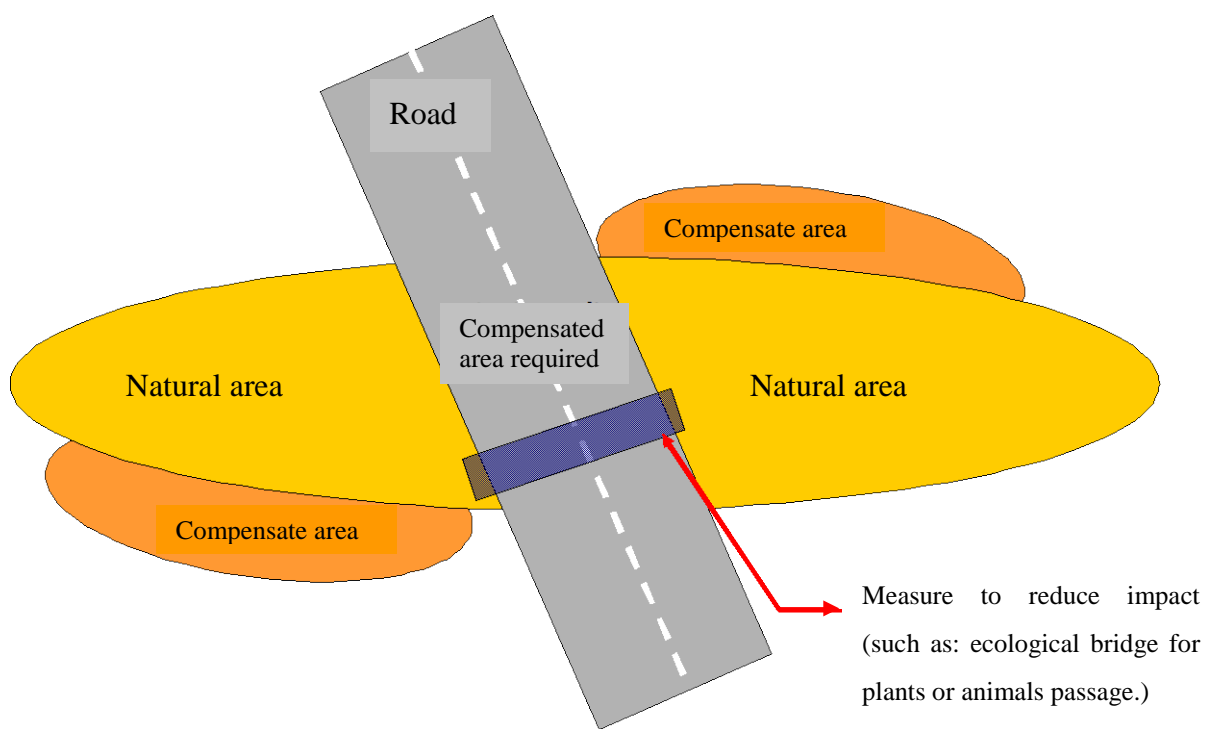


Figure7 : Illustration of road programming required to compensate for the ecological environment.

Moreover, for German field and farmland, it was designed with water through as could as possible. Therefore, smashed stone road and grass planting tile road surface under paving were adopted to increase the water sinking from raining.

In general, the ecological construction on freeway and railroad often tried not to

separate the habitats or created the new habitats for compensation after damage.

(3) Water passage naturalized

In consideration of reducing the stream flow, and beautifying the landscape with green belt function (refer to Figure 8), and water quality purifying, original cement canals have to begin re-naturalized for construction. On the both sides of canals, there were trees and aquatic plants to create the curve type stream. In addition to that, its function was complied with movement space of habitats and increased the natural scenery for leisure and tourism purpose.



Figure 8 : Construction process for water passage naturalized.

(4) Stone wall

The words of habitats for creatures are called as “Biotope” in English and “Biotop” in German. It symbolizes for life, like in Bio of Hebrew, and topos means for “habitats applicable to the creatures”. Traditionally, German stone wall often seen in the grape garden, which was full of numerous pores and gaps, and easily to be accommodated for lizard, snake, birds, and insects, etc.

The porous space of habitats is based on most of animals that need of small space for rest and breeding purpose, and how many the small space decides for how much the animals are. Hence, viewing from practical environment, versatile animals depend on “porous space” provided.

Small city of Lorch in German Rhine preserved some part of traditional grape culture, and those grape gardens were for ecological maintenance. Through old stonewall and porous and warm keeping function, the habitats were provided for the creatures the secret space for rest and breeding. Therefore, the surrounding area of this grape garden could be connected to form the complete biotope for habitats.

2. Community Aspects

(1) Village Construction

Making use of roof, balcony, flower court, and front or back yard of the building to plant for green space, there were many small green blocks to provide habitats space for creatures' rest and breeding. It had greatest benefit to upgrade the living quality.

(2) Water Resources preservation and Utilization

Other than adopting many measures to conserve the natural environment and landscape maintenance, to achieve the goal of harmonious development between mankind and natural ecology, the everlasting utilization of water resources is under reasonable way of utilization and maintenance in Germany. For example, the preservation and utilization of rural community rain (refer to Figure 9), water saving, underground water preservation, and climate regulating.

Moreover, rural community also adopted wastewater treatment system to culture for ecological plants (refer to Figure 10), and it lets wastewater be purified for sustainable development of ecological environment.

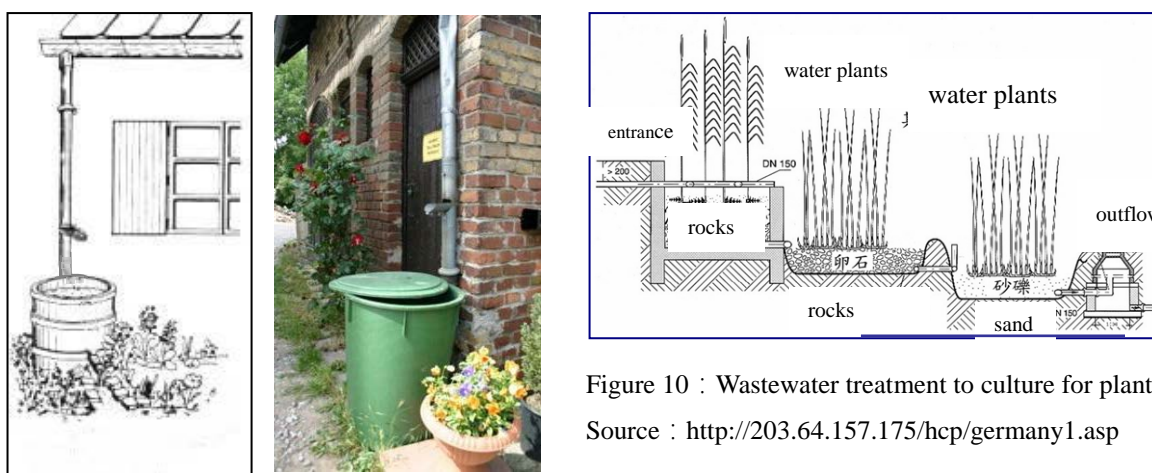


Figure 9 : Preservation and utilization of German community rain

Figure 10 : Wastewater treatment to culture for plants.
Source : <http://203.64.157.175/hcp/germany1.asp>

(3) Square and Spiritual Symbol

Community spirit, community life and village culture can be revitalized, for instance, by preserving or establishing community centers and supporting social and culture initiatives. Old house was remodeling for community activity center, it provides villagers a meeting place and all activity centers.

“May Tree” beside square is the special culture specialty of Rosshaupten, and there were lots of taboo to symbolize the local specialty under production and historical progress. Therefore, for different villager in Rosshaupten, “May Tree” becomes their local symbol.

(4) Activity Center and Festival Celebration

Activity center beside community square of Rosshaupten was originally applied for school, and after it was changed under remodeling, it was applied for activity center of community and the functions of this space were the friendship connection for the villagers.

While, if there was a big-scaled celebration activity, for example in the village of Hinterzarten, then one outdoor space provided for temporary outdoor celebration purpose and performance site. After the activity is ended, it restores its original ecological environment to reduce the impact of mankind activity against natural environment.

(5) Reutilization of Private Old Building

A sustainable housing development with scarce land consumption must be promoted, for instance by preserving characteristic village buildings through converting their use and renovating them.

IV. Meaning of German Landscape Planning for Rural Development

In order to maintain for diversified landscape and beautiful ecological environment of German rural village, landscape plan is established in accordance with the regulations stipulated. In the process of land utilization and resources development, ecology and landscape are factors under consideration to keep harmonious between nature and land so as to benefit for mankind and for the best orbit.

Wilhelm Landzettel mentioned, "When rural community is renewed, it shall include surrounding environment. The relation between rural village and surrounding environment just like the yolk and albumen. No albumen causes any fried egg for hungry desire." Therefore, rural village and natural landscape shall be deemed as one unit under integrated construction for sustainable development. Herewith the concept and working method of German ecological environment planning for sustainable rural development are stated below:

1. Agricultural Development in Accordance With Eco-Conservation

In order to avoid damage caused by agricultural production and rural construction against ecological environment, German policy under concept of ordinary agriculture (ordnungsgemaesse Landwirtschaft) and environment oriented is set-up. In addition to protection for long-term interest of agricultural production and reasonable land reutilization, the rural ecological environment and natural resources

shall be maintained appropriately for harmonious condition.

As to farmland utilization, German system of “Agrarian structure preplanning (AVP)” is built up to regulate the competition on farmland utilization from different departments. “Agrarian structure preplanning (AVP)” mainly is to provide the farming structure, soil, and nature conditions for the whole area and basic social economic information that are used as reference for integrated programming. In the aspect to change farmland, joint auditing system (Traeger der oeffentlichen Belange) must be mated, so as to let each department express their individual comment and opinion for thoughtful consideration and assessment. For what kind of farmland shall be developed for production or forestation, the ecological function of farmland must be played to meet the goal of full utilization and sustainable ecological environment.

German “Rural Agriculture Promotion Act (Das Gesetz zur Foerderung der baeuerlichen Landwirtschaft)” was promulgated on July 12, 1989. One direction is to sustain the development of family farm by giving supportive factors to encourage for maintenance on ecological environment, and another is to restrain the big-scaled enterprise husbandry breeding and fertilizers investment to sustain the ecological environment. Also, it tries to avoid the problem of over production. German agricultural policy did emphasize on other functions except production. Such as: adopted mitigation system, direct income transfer, social policy (social security), and extensive farming management, etc. to assure mankind have natural living basis with quality living for sustainable development.

Reviewing the policy of agricultural regional programming and integrated farmland utilization planning in Taiwan, there are no appropriate legal basis for each governmental level to follow, therefore, the performance of agricultural planning is unable to be carried out. Facing to the competition of farmland resources from governmental departments and farmland converted by farmers, the government of Taiwan shall adopt the German policy as reference. It is expected that a sound system under regulations stipulated can be built up early in Taiwan to warrant both farmer’s income and reasonable farmland utilization as well as to promote farmland resources conservation, and production.

2. Using the Policy of “Land Consolidation” to Build up Eco-Green Network for Wildlife Conservation Habitats

Except considering about improvement on agricultural structure and integrated development, wildlife conservation habitats green network and ecological area connection also shall be programmed. When in the process of consolidation, all deserving natural landscape under construction must be protected without damage. All historical sites, memories, natural protection areas, and important scenic spots shall

not be changed, managed, and altered only under permission or consent from concerned unit. Water resources on landscape area, such as: swamp, everglade, pond, and fish pond, etc. must sustain for their original ecological function. The change of stream flow also must coordinate to the demand of water resources management, and also the application of hill-side land and non-tillage land is an important loop of farmland consolidation. Therefore, according to different land property, habitats for plant and animals, and possible reutilization, farmland consolidation is often classified for different application below:

1. Extensive farming production, 2. Seedling culture area, 3. Reforestation area, and 4. Leisure or camping land, to match the demand of production, habitats, and leisure under future development.

Farmland consolidation was adopted by German government to improve agricultural structure, promote agricultural development, and purchase land required to build up habitats for green network system. In Taiwan it was limited among land management, water passage repair, for farmland consolidation. Until now, not yet expanding to the level of ecological environment conservation, the government of Taiwan shall refer to the German policy to promote the farmland consolidation in Taiwan and improve production condition, as well as sustain for the ecological environment.

3. Planning to Care for Both Natural Ecology and Humanistic Culture

German ecological environment plan not only includes natural environment, such as: green belt, swamp, everglade, forest, and grassland, etc. but also covers the programming on cultural environment, such as: rural historical things, sites, and building style, public facilities, etc. living environment for the villagers. One of building management plans in Germany was that “The building floor, height, color, appearance, and roof slope, etc. are limited by landscape, community outlook, environmental protection, culture, climate, density of population, and public facilities, and so on.” Moreover, it was strictly stipulated that new or old building construction or repair must be complied with the rural landscape and requirement on ecological environment”. As a result, rural multi-direction development upgrades the living quality, and sustains natural landscape and environment.

In short, German community is not only to reserve the traditional rural history and culture but also to care for versatile buildings and public facilities and integrated landscape environment to meet ecological demand. Even the street, road, lane inside the community, all its paving, colors, styles, quality can completely natural and harmonious to blend with environment for sustainable development.

However, by reviewing this aspect in Taiwan, because there is no sound construction management system resulting in a mixed rural housing style, public

facilities, and building types, it is difficult to sustain for natural landscape, even more the function of green belt is lost. Therefore, it is necessary for Taiwan to refer to German system and to set-up applicable criteria for rural construction management and development. By enacting of law, the rural traditional landscape and ecological environment of Taiwan can be sustainable.

4. “Landscape Planning” process to Conserve for Ecological Resources

Landscape planning includes the description of landscape, confirmation of landscape development goal, and policy regulating to keep deserved landscape for future development and conservation. It is to aim at promoting the balanced biological environment and natural resources. The German phrase of “landscape plan” represents “the professional plan tool of natural conservation and landscape protection”. While, its function is to take the responsibility for natural conservation in the process of farmland utilization under BnatSch G.

In Taiwan, there is no rule to maintain for rural ecological environment and for tourism development, usually the public construction caused serious damage against rural landscape environment. Therefore, German landscape plan protected under legal system and it is successfully performed to be worthy of our reference.

5. Emphasizing on “Village Renewal” and “Landscape Planning” to Promote a Tight Connection of Rural Environment

The goal of German village renewal, in addition to reserve the traditional rural building style, historical structure, and to improve public facilities and working environment, the most important work is to perform the landscape plan to couple together with rural environment for green network system. For example: Green square and park formed inside the village create for green belt space and provide habitats for creatures as well as resort space for villagers. Through improvement on interior transportation and stream flow mode, in addition to assuring safety for living quality, greenbelt establishment around road and stream naturalized to establish ecological corridor connecting to exterior environment, a complete ecological network space can be built up by means of rural greenbelt operation and habitats creating. As a result, the meaning of village renewal is based on ecology, and it is to care for both basic villagers’ living and working demand and creative ecological environment for future sustainable development.

Looking back to Taiwan, although there was “Rural Community Farmland Consolidation Regulations” stipulated to improve the living conditions for villagers, this plan did emphasize on rural community expanding, land management, and improvement on public facilities. It did not include the resources conservation of landscape area and stream naturalized process. Furthermore, the natural ecological

greenbelt of surrounding area was not considered into the community. Therefore, reference of the successful experience of German village renewal should be useful. It is our expectation that when farmland consolidation is programmed and performed in Taiwan, the government could program for landscape plan. Except proceeding on land arrangement and improving public facilities, natural ecological environment surrounding can be coupled with community for future sustainable development too. Furthermore, the community and ecology in Taiwan can be built up harmoniously to form a complete bio-network space.

6. Implementation of “Villagers Participation” in the Concepts of Eco-Conservation and Maintenance

German design on landscape plan must be coordinated with the opinions of each governmental department, specialists, and through various assessments on policy, the location and scope of Eco-conservation can be programmed. Under Federal Act about Preservation of Nature (BNatSch G), the criteria to choose conservation area and assessment policy shall be specified in details and carefully explained to the land owner who must realize clearly the reason of this plan. In order to avoid any possible conflict, it is necessary to actuate the recognition concept of natural conservation for the land owner and let him participate voluntarily in the maintenance works of the conservation.

After natural conservation area is programmed, government shall maintain the function of Eco-conservation through all means, such as: subsidy policy, to promote farmers maintaining the conservation area and cultivating environment. Therefore, the operation and management of Eco-conservation can be implemented and last for long term, and then to increase farmers adopting cultivation to meet for natural resources. Learning from aforesaid statement, the promotion of German Eco-conservation has not only the specific policy and regulation stipulated but also gathered specialist from different domains, the villager’s participation with progressive attitude is the most important factor for a successful result.

Above all, German landscape plan has complete sound system, and through the means of agrarian structure preplanning (AVP), land consolidation, village renewal, establishment of construction management and landscape plan, a healthy living and working environment for villagers to balance economic, social, and culture condition can be created under multi-directional consideration. Further, a future sustainable development for rural community can go for the best orbit.

Reviewing the conditions of land utilization and conservation in Taiwan, there is no appropriate regulations stipulated, and so far the reasonable land utilization plan still is unable to achieve, it is very difficult for Taiwan to go on the process of land utilization and conservation. Therefore, German landscape plan and rural construction

development under regulations stipulated can be provided for reference in Taiwan, when government of Taiwan proceeds for policy planning and program performance.

V. Conclusion

In 21st Conference of United Nations did manifest that “In order to shape the rural area, develop planning for agricultural structure, land consolidation and village renewal are the important instruments for implementing the principle of sustainability in Agenda 21.” It must consider the importance of economy, ecology, society, and culture, etc.

The ecological environment planning seeks to promote long-term maintenance of natural life-support systems and to ensure natural habitats for many diverse creatures. Hence, German ecological environment planning and conservation are important loop of sustainable development. Ecological environment plan is not to limit the land development of mankind, but it goes through land resources to give professional assessment and grading so as to assure the best way of utilization for land. Taking from the negative aspect, ecological environment plan is to reduce the impact against natural environment from artificial development behavior. However, taking from the positive aspect, through development behavior of artificial, habitats for creatures can be created to achieve a harmonious development space for human beings and all living creatures.

Above all, German ecological environment plan also includes the meaning of “development” and “conservation”. What is the development? It means not only expansion of human living space, but to go through artificial behavior of “creation” to develop the habitats for all creatures in the best orbit.

After reviewing Taiwan ecological conservation and land utilization, it is not yet to implement the policy of reasonable national land utilization and distribution for comprehensive development. While, the landscape code draft is still under approval, the promotion on the obligation of ecological conservation and land utilization is difficult. Therefore, the German programming on regulation and policy making for ecological environment to sustain rural development can be provided as reference for integrated rural development in Taiwan.

References

- 1 丶 Bombeck, Chiang, I-Chang, “Department of Culture and Environment Conservation, German University”, German Rural Competition, Rural Renewal, Rural Ecology, <http://203.64.157.175/hcp/germany1.asp>.
- 2 丶 Bundesministerium für Verbraucherschutz, Ernährung und Landwirtschaft (Hrsg.), rural 21 – Tagungsband, Bonn, 2001.pp.16-17.
- 3 丶 Hsu, Chen, “Community Development-Method and Research”, Chinese Culture University, 1985.
- 4 丶 Landzettel, W., Habbe, C., Die Gestalt der Dörfer, Dorferneuerung in Sachsen-Anhalt, Magdeburg 1994.
- 5 丶 Lin, Hsien-Te, “Rural Ecology, Chan Shih Bookstore”, in 1999.
- 6 丶 Liu, Chien-Zer, “German Landscape Planning”, Taiwan Economy, 179th volume, Nov. 1991.
- 7 丶 Liu, Chien-Zer, Lee De-Wei, “Study on Landscape Planning and Nature Conservation in Taiwan”, volume 43, Taiwan Bank Journal, 4th edition, Dec. 1992, Page 299-353.
- 8 丶 Liu, Chien-Zer, “Land Utilization Plan and Control – Comparison between Taiwan and Germany”, Cheng Chung Bookstore, Mar. 1994.
- 9 丶 Liu, Chien-Zer, “Implication of European Agricultural Development Experience”, the World of Agricultural Chemicals, 239th edition, Mar. 1995.
- 10 丶 Liu, Chien-Zer, “Theory and Practices of Agricultural Policy”, Compiled by University as Book 03, published by Chi Ying Publication Co., 1996.
- 11 丶 Liu, Chien-Zer, “National Land-Use Planning” Department of Agriculture and Economy, National Chung Hsing University, 1997.
- 12 丶 Liu, Chien-Zer, “Research on Content and Problem of Rural Plan Construction”, Taiwan Land & Finance Quarterly, volume 34, 1st edition, Mar. 1997. Page: 221-231.
- 13 丶 Liu, Chien-Zer, “National Land-Use Planning and Agriculture”, Policy Monthly, 41st edition, Dec. 1998, Page 21.
- 14 丶 Liu, Chien-Zer, “The Village Renewal in Germany and Its Implications for Taiwan”, Journal of Agricultural Economics, 69. 2001 ◦
- 15 丶 Liu, Chien-Zer, “A Study on the Sustainable Development of Rural Area in Germany”, Journal of Agricultural Economics, 74 丶 2003 ◦
- 16 丶 Liu, Chien-Zer, “Research on Rural Sustainable Development in Taiwan”, Agricultural and Finance Publication, 50th edition, Jan. 2004.
- 17 丶 Nolten, Ralf, “Concepts and Measures for Village Renewal-German experiences”, Seminar at Graduate Institute of Rural Planning, the National

Chung-Hsing University, 2003 ◦

18、Nolten, Ralf, “The contribution of Landscape Planning to Village Development”, Seminar at Graduate Institute of Rural Planning, the National Chung-Hsing University, 2004 ◦