

Study on City Agriculture Model under New Urbanization of Xixian New Area

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Abstract. This paper starts from social economy, cultural resources as well as landscape and ecology of agriculture; it makes study on integration model of new area space under agricultural element. It uses modern agricultural landscape as basis and comprehensively considers coordination relation of city and town, convenience of agriculture cultivation, comfort of agricultural community and ecological effect of agriculture; it forms mutual-penetrated space relation between rural community in town and garden landscape, which shapes space pattern of new area with organic dispersion of settlement group, mutual intersection of ecological forest, overall support of modern agriculture as well as Insert embellishment of beautiful town.

Introduction

City agriculture is the place of providing people for leisure, tourism, agriculture experience and rural comprehension by using garden landscape, natural ecology, environmental resources and combing with production of animal husbandry and fishery, management activity of agriculture, rural culture and rural life in the city area, it is the industry [1,2,3] integrates production, life and ecological function of agriculture into one system. It is the extension and penetration of agriculture from the first industry to the third industry and modern agriculture depends on city and services for city. This newly-emerged agriculture production model can not only increase farmer income, accelerate quick development in local economy, but also it has profound meanings to effectively solve problems of agriculture, farmer and rural area, realize labor transfer in rural, quicken fund accumulation, completely accelerate economic benefit, social benefit and environmental benefit in rural area as well as establish city and town society with overall development.

Because plenty of rural population floods into city, which causes idle land of agriculture, with the population increase, city expansion, it causes reduction in agriculture land in the surroundings, While with the development of modern agriculture, agriculture except has production function, it also has landscape, ecology and service function. Therefore, so solving agriculture problem is the effective way of solving conflicts between urban and rural areas, preventing city from being excessively expanded. Shanxi government hosts new release conference in State Council Information Office to release overall planning of Xixian new area, which marks that Xixian new area has been formally established. It clearly points out in the plan that Xixian new area will develop modern agriculture with ecological agriculture, leisure and tourism agriculture, export-oriented agriculture and establish vegetable basket base and modern agriculture base of Xian in the future.

This paper starts from 3 aspects such as social economy, cultural resources and ecological landscape, it makes study on integration model of new area space under agriculture element, it puts forward cluster integration model and space route from farmer transformation, way change in agriculture industry and change in cluster system, it extracts cultural connotation and value from agriculture, combines with culture and relics protection of new area to establish integration model of agriculture and cultural relics with synthetic development.

State analysis on new area space of Xixian

Analysis on agriculture overview of Xixian new area: Xixian new area is located at the conjunction area of Xian and Xianyang, it has the distance of 10 km to city center of Xian from east

and 3 km from city center of Xianyang from west, it is in the opposite side of technology development area, Luba ecological area and international port area by Weihe River. It has 6 express way(including under construction), G312, G 108(310) etc and 2 national roads, 2 provincial roads S208, S 104 etc pass through city, so it has superior regional advantages and convenient transportation. The overall plan of Xixian new area in 2011 divides it into 5 new cities, they are respectively port new city, Jinghe River new city, Qinhan new city, Fengxi new city and Fengdong new city, which is indicated in diagram 1.

The planning control area of Xixian new area is 882 square kilometers, urban and rural land for construction is km², river, protected area, basic agricultural land etc are about 610 km², account for 69.19% of the total land area, the summary of current land is indicated in table 1. The overall production of Xixian new area accounts for absolute percentage, agricultural production is relatively original, it takes traditional agriculture as main part, the added-value of subsidiary agricultural products are relatively low. The agricultural land is mainly distributed in new city of Jinghe, new city of Fengxi and new city of Fengdong as well as non-construction land in the middle and east of Qinhan new city. The crops most are the traditional crop such as wheat and corn; it only arranges vegetable in south bank of Weihe River. Fruit garden is mainly distributed in west of Qinhan new city and north of port new city, it is relatively concentrated, and some areas form integrated scale. West of Qinhan new city and north of port new city mainly plant apple, the middle part of Qinhan new city is pear garden, it is relatively concentrated. The grape garden in Weiling surrounding forms also forms certain scale, it plants date and apricot along Taiyuan zone, watermelon and peach are in the scattered distribution.

Except for traditional agriculture, it also develops city agriculture. Xianyang Zhangyu Wine is located in the middle of Qinhan new city, it only has 4 km away from Xian Xianyang international airport, the early establishment in under construction, and it will become the high-end leisure place in Xixian new area. Xinpai ecological farm village and Haoshi ecological farm village, it sets experiential picking garden experience by combing with fruit cultivation in the garden, it mainly has grape picking garden in Veiling, peach picking garden in Shahetan, high-quality walnut base in Changan, ecological garden in Fengjing. The overall scale of experience and leisure facilities are smaller, the development level is relatively low.

Table 1 Current land summary table of Xixian new area

Land code	Category name		Square(km2)	Percentage (%)
H	urban and rural land for construction		135	15.31
	Of which	City land for construction	46	5.22
		regional land for construction	10	1.13
		Rural land for construction	71	8.05
		Land for relics protection	8	0.91
E	Non-construction land		747	84.69
	Of which	Water area	110	12.47
		Land for agriculture and forest	467	52.95
		Other non-construction land	170	19.27

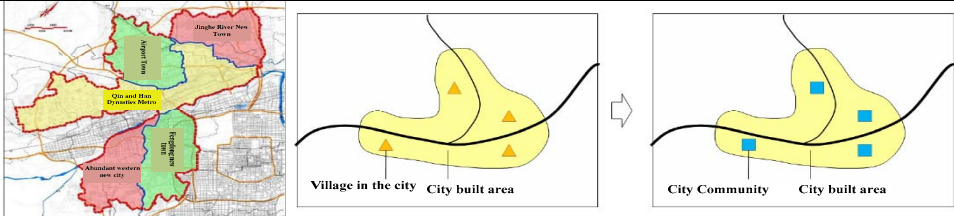


Diagram 1 Areal map of new city in Xixian new area Diagram 2 Transformation channel of urban village

Current characteristic of space in Xixian new area:This new area has the following problems: 1 dispersive overall layout, extensive application of land, overall layout dispersion in city and rural in new area, city and town settlement, rural and village settlement all present situation of extensive and unfocused land application of different degree. This kind of composition and distribution cause a series of problems such as low construction level of infrastructure and public facility in town and

rural village, low application efficiency etc. 2 The ecological environment in new area is low, it neglects greening in city and town construction, it lacks of large-scale green plaza for residents activity, the road greening is also insufficient, all the above causes bad environment in city and town, and there is usually too many dusts on the road. Rural and village area lacks of uniform planning, production and life garbage are littered and dumped, sewage is randomly discharged, disorder architecture layout and pipeline is randomly laid. 3 Transportation is in the support demand state, the instructive development is weak, the current transportation and space development in city and rural lack of necessary connection and interaction, transportation is still in the state of support demand, most of them are point to point one, transportation guidance and development mechanism have not been established, utility display is insufficient. 4 Ecological and cultural resources are simply protected, it has bad development and application, most of modern cultural relics are occupied by farmland, most of them are disappeared on land, there are only some ecological and cultural resources are simply protected, some even are in the neglected state, active protection as well as development and application are obviously insufficient.

The current state of space in new area has the following aspects: 1 Balance development in city and rural, the rural population is in the leading place, urban construction is backward and difference in city and rural is not obvious, and the binary contradiction is no so outstanding. The space development of city and rural is different from the traditional structure of central city-village. The city and rural development are in the balance state of low level. 2 Space development has obvious tendency: the city construction in the east of ring highway is relatively quick, the city construction near Xianyang are south of Weihe River are quick. City construction in new are presents state of concentrated development, it has the trend of continuous development along main road and river. 3 Dispersive layout in rural and village areas: rural and village areas are affected by traditional layout and structure as well as guidance of basic farmland protection and policy of urban and rural development, it presents state and characteristic of random distribution. 4 Fragmentation in farmland: farm land is allocated by number of farmer family, it is difficult to form large scale and modern management, and it can not efficiently use farmland.

Study on space integration model of Xixian new area under agricultural element

Settlement space integration of new area under effect of agricultural and social economic element: The main income of farmers in urban village is from house renting and lease, the people in urban village are very complicated, it has some dangerous hidden danger. The future development in village will be integrated into city to form city community, the villagers adopt way of arrangement in locality, and the left land for city construction will implement land use right granting to obtain fund balance. The transformation channel is indicated in diagram 2; this channel is suitable for intensive development of core land and garden city area. Through land transfer of city construction, the rural implements community establishment to get settlement system of new area: core place-garden city area-beautiful town-characteristic village. In the integration of new area settlement, the core place mainly includes: new city area of Jingyang, port new city area, Qinhan new city area, Fengdong new city area, Fengxi new city area, these 5 new cities are the comprehensive city area integrates housing, business, commerce all in one system, it mainly undertakes the population of new city. The garden city are is surrounded the core place, one core place is surrounded by several garden city areas, the quick road is connected by garden city area and core place, beautiful town is distributed in the surrounding of core place and garden city area, it is connected by artery of garden area and quick artery, scale of characteristics town is smaller than that of beautiful town, it is attached to surrounding of garden city area and beautiful town or artery of garden area and forms single town. Each level and system is connected by transportation artery and forms new transportation net, the settlement and integration model of new city is indicated by diagram 3.

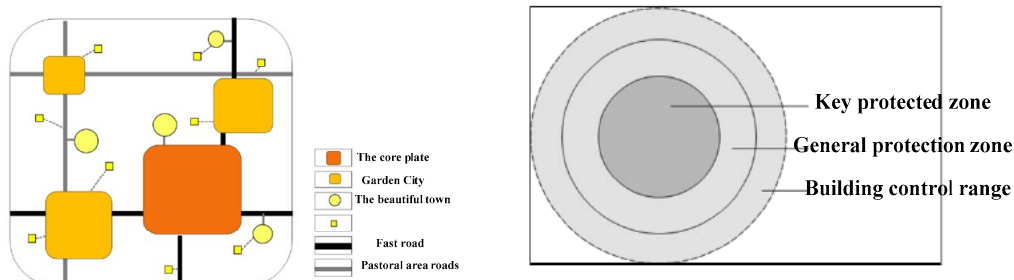


Diagram 3 Settlement and space integration model of Xixian new area Diagram 4 (a) Space integration model of cultural and relics area

Culture and space integration under agricultural cultivation and cultural element:

According to regulations of relics protection unit on protected area of relics, it divides protected area of relics into three circles structure such as key protected area range, general protected area range, and control range of building. The key protected area range mainly integrates agriculture landscape guidance presented by relic's protection and relic's scene, including ground and underground relic's body, area range within 50 meters of outside and concentrated distributed area of important relics, it forbids each kind of production and life activity in this range. Agricultural landscape of general protected area range evolves to ecological and cultural forest, concentrated unimportant protected area, which means the area within 100 meters of relics. Control range of building has little effect on historical environment of relics, it is mainly farmland landscape mainly on tourism farm area, and this model is indicated by diagram 4(a). Sometimes, the general protected area and control area of building can be overlapped, at this time the surrounding of relics area will form one kind of integration and organization model, that is to combine with ecological and cultural tourism, farm zone to make arrangement, the space organization model is indicated by diagram 4(b).

Under this integration model, relics space of new area should consider historical environment, seasonal landscape, cost saving in key points, it should plant high and big arbor forest belt between protected area as well as constructed area of city and village, especially between protected area of Xihan Dynasty Mausoleum and farm area to form ecology and green barrier, which can provide better environmental basis for overall exhibition in the future.

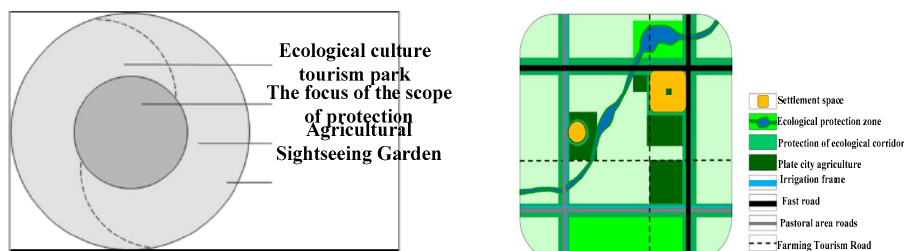


Diagram 4 (b) Space integration model of cultural relics Diagram 5 Landscape space integration model of Xixian new area

Landscape and space integration of new area under element effect of agricultural landscape and ecology: Landscape space of Xixian new are is the environmental matrices of new area, it mainly includes landscape space outside of settlement, ecological garden area is different from new area settlement, the core place, garden city area and beautiful town are all in it. New area uses agriculture field as matrices, ecological landscape passage and relics landscape passage form better landscape and ecological passage in the new area, it arranges modern city agriculture in the settlement and group to instruct and develop modern city agriculture, agriculture with high added-value and profit, green pollution-free agriculture, which strictly protects ecological elements such as ecological forest belt, farm field, ecological passage, water system etc, which organically organizes settlement system of core place, garden city area, beautiful town and characteristic town in new city, which forms unique integration model of landscape space, which is indicated in diagram 5.

Integration model of new city space: Synthesizes analysis on space element of new area, it summarizes the space integration model of Xixian new area, from 3 aspects: space integration of settlement, space integration of culture and space integration of landscape, which is indicated by

diagram 6. Space integration of Xixian new area uses agricultural protection as instruction and balance development of urban and rural as support to solve farm problems, adjust agricultural structure, optimize space resources, explore distinctive culture, , strengthen landscape and ecological construction, establish integration model of city and rural coordinates with agriculture. Space of new area uses modern landscape as basis, it comprehensively considers coordination relation of city and rural, agricultural cultivation is much more quicker, comfortableness of farm community and effect of agricultural ecology, which forms mutual-penetrated space relations between rural community of city and rural as well as garden landscape, which shapes space pattern of new area with organic dispersion of settlement group, mutual intersection of ecological forest, overall support of modern agriculture as well as Insert embellishment of beautiful town.

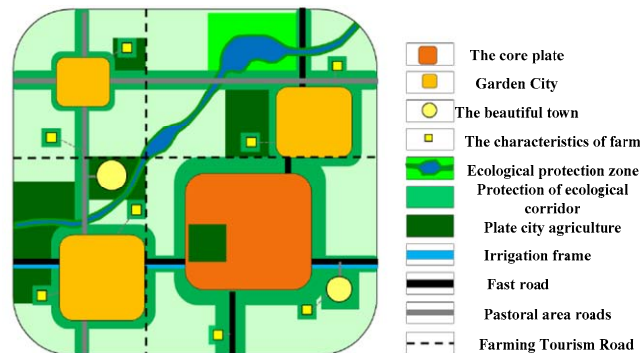


Diagram 6 Space integration model of Xixian new area

Conclusion

This paper starts from 3 aspects such as social economy, cultural resources and ecological landscape, it makes study on integration model of new area space under agriculture element, it puts forward cluster integration model and space route from farmer transformation, way change in agriculture industry and change in cluster system, it extracts cultural connotation and value from agriculture, combines with culture and relics protection of new area to establish integration model of agriculture and cultural relics with synthetic development. It starts from ecological value of farmland landscape; it uses farmland plague, passage, base to make study on structure and regional pattern of farmland landscape, puts forward space integration model of farmland landscape in new area. Through element integration of 3 aspects, it finally proposes space integration pattern and space system structure of Xixian new area.

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