Public Participation in Land Use Planning: Values and Case Analysis

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Abstract Objective: we want to explore values and methods of public participation in land use planning through analysis on values of public participation and case of Ji'an County in Jiangxi Province. Methods: document and data method, case analysis method, qualitative and quantitative combined methods. Results: public participation in land use plays a positive role in improving science and practice of planning. Conclusions: preparation and implementation of land use planning should manifest human-oriented, public participation, wisdom of the masses, scientific demonstration, and democratic decision-making.

Key words Land use planning, Public participation, Participation value, Case analysis

Land use planning (LUP) is the plan and arrangement for future land use in certain region. On the basis of regional socio-economic development and natural and historical features of land, LUP is a type of comprehensive measures for reasonable space-time distribution of land resources and for coordination and organization of land use[1]. It is not only a technical solution for implementation of plan, but also a decision-making process of public management[2]. This process will produce profound influence on people's vital interests[3]. In both Comprehensive Plan for National Land Use (2006 -2020) and *Proposal of the CPC Central Committee for Formulating the Twelfth Five - Year Plan for National Economic and Social Development*, there are provisions of establishing and perfecting the public participation system and subject to public supervision. Besides, along with the awakening of the democratic awareness and introduction of self-government idea, the LUP concept, system, method and implementation system has been greatly changed in the present stage, and the core concept of building modern LUP system in conformity with Chinese actual conditions includes three aspects: planning in accordance with law, scientific planning and democratic planning[4]. No matter facing new changes and new regulations, or implementing new concepts, land policy must protect farmers' interests[5], and land use planning must introduce participation procedure and democratic decision-making, and enhance expert consultation and public participation[6-7].

Public participation in China is still at early stage[8], which is closely related with lack of understanding the value of public participation, and there are no relevant researches about the public participation in public policy-decision[9]. In line with these situations, we explore values and methods of public participation in land use planning through analysis on values of public participation and case of Ji'an County in Jiangxi Province.

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1 Analysis on the value of public participation in land use planning

At present, the public participation is playing a bigger role in planning and environmental management at local level, which receives wider social recognition. Canadian scholar Ciaran[10] and American scholar Creighton[11] believes that the public participation in land use planning functions as providing information, balancing interests and strengthening democracy; in 1979, Glass once put forward that values of the public participation include five aspects: information exchange, education, seeking support, perfecting decision making and absorbing opinions[12]. American famous property law expert Ellickson contends that the participation process during planning has at least three benefits. First, benefit of efficiency. The benefit of efficiency can make government policies that influence individual interests become more accurate and effective. Second, benefit of statement. This benefit can make those people who are subject to decisions can express their opinions to government's face. Third, benefit of dignity. The government making explanation of policies influencing individual rights is favorable to protecting citizen's dignity[13]. Doctor Chen Zhenyu from Shanghai Jiaotong University says that the public participation includes process value and physical value. In the process value, one is theoretical analysis, mainly discussing what functions public participation process should bring into play, and the other is empirical analysis, mainly discussing what functions the public participation process have actually brought into play[14]. Wang Xixin believes that through the public participation, public opinions can be expressed without stopping, and the administrative power also can become legitimate through direct expression of public opinions[15]. Liu Jiansheng considers that the public participation integrates process control and physical control, shows the whole process of administrative act in the vision of the public. This is favorable to enhancing the supervision over administrative subject, who will also actively accept the public supervi-

sion, guide and supervise scientific and democratic decision making, raise administrative efficiency and reduce transaction cost[16-17].

The above scholars analyze values of the public participation mainly from actual level and legal level. In combination with Chinese actual conditions and practice cases, we believe that values of the public participation in land use planning mainly include four aspects. Firstly, it is favorable to obtaining and grasping exact information required for land use planning, improving quality of decision making for planning, and improving science of planning. Secondly, it can reflect the public will, respect expression of public interest, safeguard democratic benefits of the public, and improve democracy of planning. Thirdly, the public participation provides an exchange platform for the public and government, which is helpful for enhancing the trust of the public in the government, influencing policy decision and strengthening policy credibility, and laying solid foundation of legitimacy of land use planning. Fourthly, it is favorable to resolving conflicts between interest subjects, reaching common understanding, reducing chance of delay, reducing transaction cost, implementing effective supervision with the aid of the public, and making the implementation of planning more convenient and stable.

2 Case of the public participation in land use planning

2.1 Basic conditions of the case Ji'an County (114°27′ to 115°30′E, 26°38′ to 27°37′N) is situated in the middle of Jiangxi Province, at the center of Jitai Basin, and in the midstream of Ganjiang river basin. Now, it administers 11 towns and 8 townships, with an area of 2 110.98 km^2 and population of 437 500. The proportion of the primary, secondary and tertiary industry is 31.1, 40.1 and 28.8 respectively. According to survey results of land use change, in 2005, the total land area of Ji'an County is 211 098.51 hm^2, including 182 922.03 hm^2 agricultural land (86.65%), 9 890.20 hm^2 construction land (4.69%) and 18 286.28 hm^2 unused land (8.66%).

This case refers to the overall planning for land distribution of land use in Ji'an County. In Dunhou Town of Ji'an County, a recreational square with an area of 64 hm^2 is built. To the oblique opposite of the square, specifically in the east of Fuchuan road, there is a piece of forest land with an area of 35 hm^2. Near the square, it has developed real estate and built residential quarters. Real estate developers make a fetish of the development value of this piece of land, while local residents think that it is required to build a forest (ecological) park with the aid of existing land and forest resources, to realize a mutual complementation with the square and form a favorable ecological habitat environment.

2.2 The process of the public participation in decision making of land use planning At the time of distributing land, the leading group of land use planning tries to introduce the public participation in decision-making process of land use planning, so as to bring into play advantages of public participation. The whole participation process includes two stages: two times of questionnaire before hearing and the voting at the planning hearing. The planning organizing unit works out three schemes A, B and C. The scheme A takes it as real estate development project; the scheme B takes it as an ecological park; and the scheme C takes it as auxiliary commercial land for residents. In the first stage, on the basis of local actual conditions, we conducted wide propagation and mobilization, and selected villagers who have good mass foundation and local Deputy to the People's Congress with to do the questionnaire before hearing. The questionnaire and valid ones received is respectively 68:64 and 68:61 for two times. There are single choice and multiple choice questions. In two times of survey, the number of people agreeing with scheme A, B and C is 21, 62; 23, 59 and 43 respectively. One month later, we selected those villagers having good mass foundation, insiders, cadres of village committee, and representatives directly selected by villagers to participate in decision making of planning. Besides, the county government selected public welfare representatives and technical experts from relevant departments and organizations, and sends the planning scheme to representatives of the public participation for information. Later, the land distribution hearing was held, 56 representatives attended the hearing, including 41 representatives of the public attended, accounting for 73% of the total participants. The reset 15 representatives are public welfare representatives and experts from the Construction Bureau, Environmental Protection Agency, and Forestry Bureau of the county, and Dunhou Township government. The group of experts has 15 ballots, and the number of people agreeing with the scheme A, B and C is 6, 13, and 10 respectively. The villager representatives have 41 ballots, and the number of people in favor of the scheme A, B and C is 19, 40 and 31 respectively.

2.3 Selection of model and determination of index weight We adopt the public participation comprehensive support index model to have a quantitative expression of results of the public participation, providing method support for public participation in decision-making of land use planning. Considering that Ji'an County is a pilot region of the public participation in land use planning and it is the first time to introduce the public participation into public policy making, in addition to technical features of land use planning, we take the coefficient of the public weight as 0.4 and the coefficient of expert weight as 0.6. Its mathematical expression is as follows:

Firstly, the public support index:

$$Ps = \frac{\sum_{i=1}^{n} Ps_i}{\sum_{i=1}^{n} Ps_i + \sum_{i=1}^{n} Po_i} \times 100 \quad (1)$$

where Ps signifies the public support index with the value range from 0 to 100; 0 stands for absolute opposition; 100 means complete agreement; Ps_i represents the number of the i th affected public who agree; and Po_i refers to the number of the i th affected public who disagree, $i = 1, 2, \cdots n$.

Secondly, the expert support index:

$$Pe = \frac{\sum_{i=1}^{n} Pe_i}{\sum_{i=1}^{n} Pe_i + \sum_{i=1}^{n} Peo_i} \times 100 \quad (2)$$

where *Pe* signifies the expert support index with the value range from 0 to 100; 0 stands for absolute opposition; 100 means complete agreement; Pe_i represents the number of the experts who agree; and Peo_i refers to the number of the *i* th experts who disagree, $i = 1, 2, \cdots n$.

Thirdly, the public participation comprehensive support index:

$$Pc = 0.4Ps + 0.6Pe \quad (3)$$

where *Pc* signifies the public participation comprehensive support index with the value range from 0 to 100.

Fourthly, grading of the public participation:

According to the public participation comprehensive support index, we classify the public participation into four grades, namely positive support, comparative support, basic support, and objection. Using equation (1) through (3), we calculate the scheme A, B and C. The public participation comprehensive support index Pc is separately 39.2, 90.8 and 66.7. It shows that most people support the scheme B, or specifically, it should be planned to be an ecological park. The detailed results are listed in Table 1.

Table 1 Grading of the public participation comprehensive support index

Grade	Positive support	Comparative support	Basic support	Objection
Grading index	$82 < Pc \leqslant 100$	$70 < Pc \leqslant 85$	$60 < Pc \leqslant 70$	$Pc \leqslant 6055$
Index of scheme A, B and C	B = 90.8		C = 66.7	A = 39.2
Effect	Land distribution is reasonable, the public are satisfied, conforming to ecological and environment-friendly, and value orientation of livable city	Land distribution is comparatively reasonable, the public are satisfied, conforming to ecological and environment-friendly target	Land distribution is basically reasonable, the public are basically satisfied, conforming to the target of basically livable city	Land distribution is not reasonable, the public are dissatisfied, not conforming to ecological and environment-friendly, and value orientation of livable city is not reasonable

2.4 Case analysis The public participation brings about positive effect in this land use planning. In key sections and regions, we apply the "two higher levels, two lower levels and one policy-making" public participation process. Specifically, the planning unit firstly conducts in-depth survey in the public and collects the public information. On the basis of these, the planning unit prepares the planning draft, explains the draft to the public, revises the draft according to the public opinions, and holds the hearing after revising the draft. Then, the planning unit makes decision on planning through quantitative analysis.

To begin with, citizens get the opportunity to express their opinions and hear opinions of the land administration department, land use planning and design organizations. Departments, experts and the public exchange opinions, overcoming various problems resulted from "information asymmetry". Finally, it brings about effect of the participation, expression, checks and balances, and decision making through democratic process.

Next, through pooling wisdom of the masses, it is able to accurately express the public demands, adjust the collective benefit and individual benefit of land use, and resolve different opinions and conflicts among the public in land use planning. These are favorable to selecting proper scheme to the satisfaction of all relevant parties and making the plan more scientific. In this case, the public participation comprehensive support index reaches 90.8, greatly improving acceptability and operability of the land use planning.

In the third place, it raises efficiency of implementation of plan and restricts unlawful practice. All parties will have norms which are mutually restrained and commonly complied with in actions, to promote successful implementation of the plan.

In line with the weak points found during implementation of this plan, we put forward following suggestions:

In the first place, the public participation, to a great extent, is still a passive participation and still at early stage. Villagers directly participating in the land use planning are extremely limited. Cases also are few about introducing the public participation into decision-making of planning. Thus, the enthusiasm of the public participation is still to be improved and the range is to be further expanded.

Besides, the public participation of land use planning should combine with Chinese actual conditions at present stage. The public participation is the product of socio-economic development, so it is impractical if the public participation is divorced from political and social system, democratic process, regional disparities, value concept and cultural quality. Democratic awareness of the public in China is still relatively weak, so the government should bring into play its leading function, actively grant powers, guide the public participation from the top to bottom, and gather wisdom of the public from bottom to top. In addition, it is proposed to strengthen propaganda and training works, improve quality of the public, provide necessary material support, and introduce the third party of public interest as necessary, to achieve continuous participation as early as possible and raise validity of the public participation.

Furthermore, we suggest providing new methods for the public participation (to obtain weak public information in the exhaustive manner), such as application of MAPGIS, ARCGIS, PPGIS, and 3S technologies, to make the public participation in land use planning develop towards visual, model-based and information-oriented direction.

Finally, it is recommended to combine the public participation representatives with deputy to the National People's Congress and villagers' (residents') council. And we suggest building the public participation system with highly "clear legal provisions" and "restrictive results"[18].

3 Conclusions

We explore values and methods of public participation in land use planning through analysis on values of public participation and case of Ji'an County in Jiangxi Province. Implementing the public participation in the land use planning, especially introducing the public participation in the decision-making of planning, plays an active role in improving democratic, scientific and practical property of the land use planning. The public participation of land use planning should combine with Chinese actual conditions at present stage. The government should bring into play its leading function, actively grant powers, guide the public participation from the top to bottom, and gather wisdom of the public from bottom to top. In addition, it is required to improve the methods and skills of public participation in land use planning, to achieve continuous participation as early as possible and raise validity of the public participation.

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