The Study on Land Expropriation Compensation Standard Based on Farmland Development Rights

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Abstract

Land expropriation compensation standard is the core issue of land expropriation system. The present unified annual output value standard and the area of integrated land price cannot solve the problems bringing by low compensation standard, and are still the compensation for land's original use. The lack of farmland development rights is the fundamental reason. This paper's research purpose is to establish a new land compensation standard which is based on farmland development rights. First of all, the paper discussed the concept of farmland development rights and land expropriation compensation. Secondly, after analyzing the status quo of land expropriation compensation standard system which is in our country, it instructed the necessity to set up the farmland development rights based on farmland expropriation. At last, based on the construction of land expropriation compensation standard which is on the basis of farmland development rights, the paper proposed that a fair and reasonable land expropriation compensation standard should include farmland use economic value, farmland social security value and farmland development rights value.

Key words: Farmland development rights; Land expropriation; Compensation standard; Unified annual output value standard; Area of integrated land price

INTRODUCTION

With the development of the urbanization process, the demand for land increases and the scope of land expropriation expands gradually. The government acquires land from farmer collectivity as state-owned construction land to transfer to the land users. The value-added benefits are mainly shared by government, while, farmers get very little. At the same time, the land expropriation compensation which given by rural collectivity and farmers is still in a low level, so it violated the farmer's right to survive and develop to a certain extent. The series of phenomena shows that our country's current farmland property right system has shortcomings and the current land expropriation compensation system is unreasonable. The lack of farmland development rights whose location is clear and affiliation is specific makes the farmer collective and individual interests severely depressed. Due to lie in the monopolistic status, the government monopolizes the development rights and the benefits from development rights. Therefore, in order to share the rights of farmland value-added income, it is necessary to accurately locate farmland development rights, and establish land expropriation compensation standard considering farmland development rights, so as to ensure farmers' rights and interests are no longer violated.

1. CONCEPT OF FARMLAND DEVELOPMENT RIGHTS AND LAND EXPROPRIATION COMPENSATION

1.1 Farmland Development Rights

Farmland development right is the sub-concept of land development right, and is also the agricultural land development right. Farmland development rights in our country mainly includes three aspects: the right of agricultural land converted to collective construction land, the right of agricultural land converted to state-owned urban land for construction purposes, and the right of improving intensive degree of land use through adjusting the structure of agricultural inputs. The main content of the paper is to research our country's land expropriation compensation standard which is based on farmland development rights, and land expropriation is to convert the collective agricultural land to state-owned urban construction land. The farmland development rights in this paper are defined the use rights of agricultural land converted to urban construction land.

1.2 Land Expropriation Compensation

Land expropriation compensation refers to the compensation which is given to the holder of the land who suffers the loss for land expropriation. For the purpose of public interests, the legal procedure, reasonable land expropriation compensation are the three elements of land expropriation behavior. The reasonable land expropriation compensation is a precondition for the existence of land expropriation. Because our country is a dual structure of urban and rural land, urban land is owned by the state, while rural and suburban land is owned by farmer collectivity except that special provisions in the law shall be owned by the state. Therefore, our country's land expropriation mainly refers to the expropriation of collective land, and our country's land expropriation compensation mainly refers to the reasonable compensation which is given to farmers and farmer collectivity land-expropriated.

2. STATUS QUO OF LAND EXPROPRIATION COMPENSATION STANDARD SYSTEM IN OUR COUNTRY

2.1 Confined by the Old Ideas of Compensating for Land Original Use and Annual Output Value Multiple

Compared with the huge added-value in the process of farmland non-agriculturalization, our country's land expropriation compensation standard is low for a long time. The direct reason of which is that farmland expropriation compensation standard is not on the basis of the farmland market and the future value, but just according to annual output value multiple of land original use to compensation. From the constitution thoughts and methods of unified annual output value standard and area of integrated land price, both still compensate in accordance with the agricultural use in fact, based on the basic measurement of annual output value multiple. For example, the biggest difference between unified annual output value standard and annual output value multiple is the measurement of farmland annual output value. The measuring range of annual output value multiplier method only limits in the output of land expropriation block, while the measuring range of unified annual output value standard extend to the municipal (county) administrative range, and some correction factors are added. With regard to the measurement of area of integrated land price, all parts of the country determine it by equilibrating the results of 2-3 kinds of measuring methods. However different regions always make the annual output value multiple method as the main method in practice.

2.2 Land Expropriation Compensation Standard not Considering Land Value-Added Income

The unified annual output value standard and area of integrated land price are calculated by the government according to the original use value, not considering farmland development value-added income. After the farmland has been expropriated, the government transfer it in a high price by market-oriented way. Thus the enormous differential benefits are all shared by the government in the process of farmland non-agriculturalization, while the compensation farmers get only rarely part of land-transferring fees. The phenomenon of expropriating at a low price and transferring at a high price dominated by local government to the current land expropriation problem.

One the one hand, that expropriating at a low price and transferring at a high price is the main reason of landless farmers being discontent. Today, farmers have been generally aware of the great differences of price between expropriating and transferring. For landless farmers, land expropriation compensation standards are serious unfair. Even if the land expropriation compensation standard has been improving in recent years, but compared with the land-transferring fees government get, is still very low. That cause the number of land expropriation conflicts, mass incidents, petitioners on the rise.

One the other hand, that expropriating at a low price and transferring at a high price makes local government the biggest beneficiaries and stimulates local government into the expansion of land area. In order to ensure the fiscal revenue and maintain the operation of the local economy, local government will continue to impose farmland, which will make ecological environment destroyed more widely.

2.3 Problems of Unified Annual Output Value Standard and Area of Integrated Land Price in Practice

First of all, there are some problems about cohesion and coordination. According to the relevant provisions of the current file, area of integrated land price is mainly applied in the scope of construction land, and beyond the range of the construction land in urban planning, the unified annual output value standard be will used. However the problem is that the expansion of the city will continue to break through the scope of original determined construction land, so that it may lead to different measuring results of adjacent plots by taking different measuring ways. Secondly, there are some problems about calculation process and method. In the calculation process of unified annual output value standard and area of integrated land price, it needs to consider a lot of factors, such as dividing regional and area and determining the correction factor and coefficient, some of which are self-contradiction, so as to increase the complexity of the operation. At the same time, there are many measuring ways of the area of integrated land price, such as correction method of price factors, case comparison of land expropriation, annual output value multiple method and superposition method. Each place should take the appropriate methods according to the specific situation, but the reality is not so.

3. NECESSITY ANALYSIS OF SETTING UP THE FARMLAND DEVELOPMENT RIGHTS BASED ON FARMLAND EXPROPRIATION

3.1 Necessity of Limiting the Abuse of Land Expropriation Rights and Protecting the Legal Rights and Interests of Farmers

Because of the need of public interest, our country can convert rural collective land to state-owned land in accordance with legal procedures, and compensate to farmers and farmer collectivity at the same time. In practice, however, most of which is for commercial purposes. Because of the lack of farmland development rights, the government can get higher profits only by paying a lower cost of land expropriation, which further stimulates the abuse of land expropriation right of government. One the other hand, that the lack of farmland development rights and the low compensation standard of land expropriation all infringe the interests of farmers, at the same time, our country's social security system for farmers also is not very perfect, which lead to the decrease of the farmers' living standards, even some farmers starting to live in abject poverty. Therefore, in recent years, the social conflicts caused by which frequently happen and have been a threat to social harmony and stability. Farmland development right is the

right to change farmland different land use, through the establishment of farmland development rights system, making farmers get the income of farmland development rights. It not only protects the farmers' legal rights and safeguards farmers' life, but also inhibit the government's motivation of land expropriation and limit the abuse of land expropriation rights.

3.2 Necessity of Strengthening the Protection of Arable Land and Basic Farmland

At present, the main policies and measures for the protection of cultivated land in our country are the basic farmland protection areas, protecting farmland total dynamic balance, realizing the balance of land use control system and the compensation regulation for possessing of cultivated land and so on. But the actual operation result of these policies and measures is not ideal. The original intention and purpose of developed countries and regions, such as Britain, the United States, France, establish farmland development rights is to protect cultivated land resources and ecological environment, and realize the harmonious development of economy and environmental protection. Practice proves that the farmland development rights system is one of the most effective measures to protect arable land and basic farmland. While the current cultivated land protection system in our country cannot have very good effect. If the farmland development rights are established in China and the land users must buy farmland development rights when they want to obtain the right of land development and utilization, the costs of getting land will rise greatly, and the cost of the increase will results in the decrease of farmland demand. This kind of market-oriented economy restriction mechanism will have an effect of protecting farmland to a great extent.

3.3 Necessity of Protecting the Ecological Environment

In recent years, with the development of economy and the advancement of industrialization and urbanization, ecological environment destruction in our country is more and more serious, which is starting to affect people's daily life. Governments at all levels also started to pay attention to this problem, and take a series of measures to protect the ecological environment, returning farmland to forests or grassland, returning farmland to lake, reforestation, setting up the soil and water conservation engineering, natural preservation area, ecological preservation area and so on. These measures have had some achievements, but for now, our country's ecological environment deterioration trend still continues. In the fifties and sixties of the last century, countries such as Britain and America also faces the same problem. In order to protect and improve the ecological environment, Britain and the United States have established the system of farmland development rights, and practice proves that the farmland development rights system has played a good effect on protecting the

ecological environment. It is necessary to draw lessons to establish the farmland development rights system.

4. THE CONSTRUCTION OF LAND EXPROPRIATION COMPENSATION STANDARD BASED ON FARMLAND DEVELOPMENT RIGHTS

4.1 The Constitution of Land Expropriation Compensation Standard Based on the Farmland Development Rights

The source of value lies on the function or utility. On the one hand, the agricultural land of our country is the guarantee of rural employment, health care and pension, in addition to have the economic function of agricultural production, so the farmland has social security function. Farmland also has the function of the food security for its safeguarding national food security, and ecological function for its water conservation, regulating climate, windbreak and sand-fixation. So, in the value form, the agricultural land should have economic value, social security value, national food security, ecological security value. On the other hand, agricultural land owners also can obtain higher economic benefits through the change of farmland use, this is the value of land development rights, and the land development rights are divided into agricultural land development right and urban land development right in the process of non-agriculturalization of farmland in China. Therefore, the comprehensive value of farmland resources consist of farmland use economic value, social security value, food security value, ecological security value, farmland development rights value and urban land development rights value.

At present, our country's land expropriation compensation of landless peasants is limited, only to farmland use economic value and social security value, and farmers don't enjoy the value of farmland development rights. Land requisition compensation is the core issue of land expropriation system reform. The unfair of the current land expropriation compensation standard is the main cause of land conflict in the process of land expropriation. Fair compensation standard should make compensation for farmers value loss fair.

Agricultural land is the carrier of farmers doing agricultural production, and obtaining economic benefits, and is also the guarantee of rural employment, health care and pension. This is the economic value and social security value of farmland resources, which should belong to farmers; food security value and ecological security value of agricultural land is external value, which cannot be owned by one person. The two kinds of value loss caused by agricultural land expropriation is not someone's personal loss, but a loss of the whole people. So the food security value and ecological security

value should belong to the state, by a share. I suggest that the farmland development rights can be divided into farmland basic development rights and farmland entity development rights. Farmland development basic rights, including some external value such as ecological safety value, national food security value and so on, has the final decision whether to change the use or not, whose purpose is to protect cultivated land resources, internalize externality value of farmland, and safeguard the interests of the whole country. It should belong to the state. Our country compensates this part of the value by means of taxes and fees. At present, there are farmland conversion tax, land value-added tax, construction land use fees and cultivated land reclamation fees. Farmland entity development rights belong to farmers and is the added value of agricultural land use conversion. Its purpose is to make farmers have the theory basic of sharing the value of farmland development rights. Then, farmland expropriation lead to the loss of farmland entity development rights value, and this part of the loss should belong to the scope of land expropriation compensation. Urban land development rights should belong to the state, because it is the redevelopment right after the farmland has been expropriated to the status of Agricultural land use economic value state-owned construction land. As shown in Figure 1:
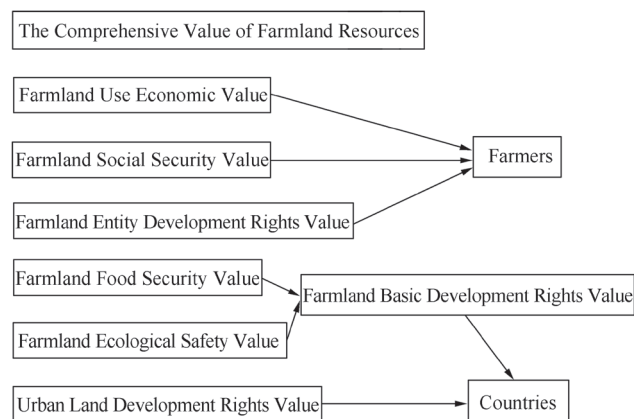

Figure 1
The Farmland Resources Value

According to the picture above, farmers in China should have farmland use economic value, farmland social security value and farmland entity development rights value. So the land expropriation compensation standard should include farmland use economic value, farmland social security value and farmland entity development rights value.

4.2 The Theoretical Calculation of Land Expropriation Compensation Standard Based on the Farmland Development Rights.

4.2.1 The Theoretical Calculation of Farmland Use Economic Value

Income reversion method can be used. The essence of income reversion method is to convert future earnings of

assets into present value of assets. Based on expectations for the future, the method is to restore present value with appropriate reduction rate from the annual net benefits of every period in the future, in order to determine the farmland economic value.

Step 1: The determination of annual net benefits of farmland

Annual net benefits of farmland = General annual benefits of farmland - General annual cost of farmland

Among them: General annual benefits of farmland = Average annual output of agricultural products × Average prices of agricultural products

General annual cost of farmland = Seedlings fee + Pesticide fee + Fertilizer fee + Depreciation of machinery fee + Artificial fee + Mechanical maintenance fee + Management fee + Other related fees

$$\text{So, TR}=\sum_{i=1}^{n}q_i(r_i-c_i)$$

TR—Net benefits of all farmland

n—Types of crops Cultivated and farm product bred in farmland

i—No. i farm product which is cultivated or bred in farmland

q_i—Output of No. i farm product which is cultivated or bred in farmland

r_i—Benefits of No. i farm product which is cultivated or bred in farmland

c_i—Cost of No. i farm product which is cultivated or bred in farmland

$$\text{So, AR}=\frac{TR}{S}$$

AR—Pure income per unit area of farmland

S—The area of the farmland.

Step 2: The determination of farmland reversion rate

Farmland reversion rate is the rate that farmland price restored from net benefits of farmland. More common international practices are: land reversion rate = safety rate + risk coefficient. In recent years, our country make the reversion rate as a one-year bank deposit rate plus a risk adjustment value which is stipulated by the people's bank of China commonly. According to relevant experts, risk adjustment value of planting can be set at between 1%-2%, but also some scholars proposed to bring in the effect of CPI growth.

Step 3: The calculation of farmland use economic value

First, according to the regulations of relevant documents, farmers have a permanent contract for the managerial right of farmland. And if the farmland is expropriated converting to construction land, it's hard to use the farmland anymore, therefore, it should calculate the economic value of farmland with infinite period. Secondly, in order to calculate simply, we can assume that every year the economic value of farmland is same, and the land reversion rate remain unchanged basically.

So, the calculation formula of farmland economic value is:

$$F_1=\frac{R}{r}$$

F_1—Farmland economic value

R—Annual net benefits of farmland

r—Reversion rate of farmland

4.2.2 The Theoretical Calculation of Farmland Social Security Value

Our country's rural social security system has just started, and not enough to make farmers have a reliable guarantee. Farmland social security function is particularly important for farmers, and farmland expropriation means farmers lost their long-term life safeguard. So the government should at the same time compensate the farmers who lost the farmland social security value. The social security value of farmland should include farmland old-age security value, health care value and unemployment insurance value. Farmland social security value can be calculated approximately by the total amount of social insurance of per mu farmland supporting the agricultural population. Hypothesis is the average age of the land expropriation area of the farmers for b.

(1) The calculation of per capita farmland old-age security value.

Farmland old-age security value can be calculated approximately by the total amount of Endowment insurance of per mu farmland supporting the agricultural population. According to the insurance company about the calculation of individual endowment insurance, the amount of per capita endowment insurance can be calculated by the following ways.

$$Q_1=(Q_{m1}\times A+Q_{w1}\times B)\times M_i\div M_0$$

Q_1—Per capita farmland social old-age security value

Q_{m1}—Amount base of endowment insurance premium of male citizens aged b

Q_{w1}—Amount base of endowment insurance premium of female citizens aged b

A—The proportion of the male population

B—The proportion of the female population

M_i—Basic living expenses of farmers aged b (The standard of monthly premium to receive)

M_0—Monthly premium base

(2) The calculation of per capita farmland health care value.

$$Q_2=(Q_{m2}\times A+Q_{w2}\times B)$$

Q_2—Per capita farmland health care value

Q_{m2}—Amount base of medical treatment insurance premium of male citizens aged b

Q_{w2}—Amount base of medical treatment insurance premium of female citizens aged b

A—The proportion of the male population

B—The proportion of the female population

(3) The calculation of per capita farmland unemployment insurance value.

Farmland unemployment insurance value can refer to urban resident's minimum living guarantee standard.

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$$Q_3 = M_d \times 12 \times [(60-b) \times A + (55-b) \times B]$$

Q_3—Per capita farmland unemployment insurance value

M_d—Urban resident's minimum month living guarantee

$(60-b)$—The years from retirement age of male farmers (men's retirement age is 60 years old)

$(55-b)$—The years from retirement age of female farmers (women's retirement age is 60 years old)

In conclusion, Per capita farmland social security value shall be equal to the total value of Q_1, Q_2, Q_3 Per mu farmland social security value shall be equal to Per capita farmland social security value divided by per capita farmland area.

$$F_2 = (Q_1 + Q_2 + Q_3)/S_b$$

F_2—Farmland social security value

S_b—Per capita farmland area

4.2.3 The Theoretical Calculation of Farmland Entity Development Rights Value

(1) Land development and added value process.

There are a variety of causes of land value increase. First, the land appreciates with the improvement of the overall economy; Second, because of the change of the land market supply and demand, the value of the land improve with the increase of social demand for land; Third, the change of land use is from low efficiency to high efficiency; Fourth, the improvement of infrastructure, such as water conservancy, transportation, electric power and so on; Fifth, the land users input labor and capital to land in the progress of using land; Sixth, it is caused by national policy and urban planning.

To sum up, land appreciation can be divided into artificial appreciation and natural appreciation. Artificial value refers to the direct appreciation that the users put capital and labor into land. Natural appreciation refers to the indirect appreciation which is caused by some reasons, such as the development of social economy as a whole, the change of land supply and demand, the change of land use, the change of policy and the improvement of the infrastructure.

There are five land states in the land development and value-added process, namely, *Farmland — Uncultivated Land — Cultivated Land — Urban Land — Real Estate Products.*

The first stage, by making the land nationalized the government put the farmland into urban land reserve center and make the land to be the uncultivated land. That the change from farmland to urban construction land causes the land value added. It belongs to the part of natural appreciation. The difference between farmland price and Uncultivated Land price is the price of farmland entity development rights.

The second stage, after the land entering urban land reserve center, the government will make the uncultivated land to be cultivated land by investing capital and manpower, such as water, electricity, pathways, ventilation, communication and leveling off land. And then, the urban land management department generally set the benchmark land price according to the local land price and land market supply and demand situation. The land appreciation of this stage mainly refers to artificial appreciation, then the difference between the price of cultivated land and uncultivated land should be the cost of land development and its profits.

The third stage, after the land becomes cultivated land, the government usually transfers the right to use construction land to the unit which will using the land by approved Selling or listing-for-sale. Market price is called transfer price. The land appreciation of this stage, on the one hand, is caused by construction land market supply and demand. On the other hand the reason why the land value added is because the change of land use (use change for industrial, residential or commercial use). So, the difference between Remised land price and cultivated land benchmark land price is the price of the market development rights, belonging to the category of natural appreciation.

The fourth stage, after get the construction land use rights, the units develop the land into real estate products through the investment of capital and labor. Thus it will bring the land price up. Land value-added source of this stage is various, both artificial value and natural value.

(2) Determination of farmland entity development rights value.

According to our country's farmland development and value-added process, farmland entity development rights value can be derived:

Farmland entity development rights value (F_3) = Construction land benchmark land price – Farmland economic price (F_1) – Land development cost – Profit of land development cost

Among them, construction land benchmark land price can be weighted through the different uses (industrial, residential and commercial) of each region. The farmland price is the farmland economic value above.

So, land expropriation compensation standard based on farmland development rights (F) can be expressed:

$$F = F_1 + F_3 + F_3$$

F—Land expropriation compensation standard based on farmland development rights

F_1—Farmland economic price

F_2—Farmland social security value

F_3—Farmland entity development rights value

CONCLUSION

Starting from the theory of farmland development rights, this paper analyzes the current situation of the unified annual output value standard and area of integrated land price system, and points out the defects and shortcomings. It proposes to establish a land expropriation compensation standard containing the content of farmland development rights. And then it provides a complete set of theory methods for the new standard. The following conclusions are obtained.

(1) Land Expropriation Compensation Standard Is the Core Issue of Land Expropriation System Reform

Compared with the traditional measurement methods, the land expropriation compensation standard of unified annual output value standard and area of integrated land price has been improved greatly, and been more reasonable. But it hasn't get the essential change, not considering the income of land development distribution. It is unfair, thus causing many problems and contradictions of land expropriation.

(2) Farmland Development Rights Are the Right that Farmland Is Changed into Construction Land

Because of the lack of property basis regarding to farmland development rights, farmers can't share appreciation income of land development. Through a series of analysis, we concluded that it is the best choice to farmland development rights configuration which is shared by farmers and nation.

(3) The Fair and Reasonable Land Expropriation Compensation Standard Should Conclude Farmland Development Rights Value, Farmland Use Economic Value and Farmland Social Security Value

From the measuring process and method, it is more scientific and operational. And from the calculated result, new land expropriation compensation standard, compared with the present standard of unified annual output value, gets a fundamental improvement.

REFERENCES

Andrew, J. P., & Douglas, J. M. (2001). Agricultural value and value of rights to future land development. *Land Economics, February*, 56-67.

Babcock, H. A. (1975). The applicable method for valuation of undeveloped land for which there is no current market. *Valuation, 22*, 1.

Barrows, R. L., & Prenguber, B. A. (1975). Transfer of development rights: An analysis of a new land use policy tool. *Agricultural Economics, 57*(4), 549-557.

Basu, S. (1997). Why institutional credit agencies are reluctant to led to the rural poor: A theoretical analysis of the Indian rural credit market. *Working Paper*.

Beck, T., & Levine, R. (2002). Industry growth and capital allocation: Does having a market or bank-based system matter. *Financial Economic, 64*, 147-180.

Berger, A., Saunders, A., Scalise, J. M., & Udell, G. (1999). The effects of bank mergers and acquisitions on small business lending. *Financial Economics, 50*, 187-229.

Brinkman, B. A. (2006). *Farmland preservation and conversion: An econometric analysis of the impact for the northeastern united states* (Unpublished doctoral dissertation). Purdue University Graduate School, Indians.

Chavooshian, B. B., & Norman, T. (1975). Transfer of development rights: A new concept in land-use management. *The Appraisal Journal, July*, 400-409.

David, A. N. (2002). Spatial economic models of land use change and conservation targeting strategies (Unpublished doctoral dissertation). University of California, Berkeley.

Giammarino, R., Nosal, E., & Loggers vs. Campers (2005). Compensation for the taking of property rights. *Journal of Law Economics & Organization, 21*(1), 136-152.

Godschalk, K. D., & Chapin, F. S. (1995). *Urban land use planning* (pp. 53-64). Urbana, Illinois: University of Illinois Press.

Gueley, J. G. & Edward, S. S. (1996). *Money in a theory of finance* (pp. 223-245). Washington: Brookings Institution.

Jason, A. W., & Jill, J. M. (2007). Takings of development rights with asymmetric information and an endogenous probability of an externality. *Housing Economics*, (16), 320-333.

John, C. D. (1997). TDRs-great idea but questionable value. *The Appraisal Journal*, (4), 133-142.

Johnston, R. A., & Madison, M. E. (1997). From landmarks to landscapes: A review of current practices in the transfer of development rights. *American Planning Association, 63*(3), 365-378.

Morduch, J. (1997). *Microfinance sustainability: A consistence framework and new evidence on the Grumman Bank* (Discussion Paper). Dept of Economics and HIID, Harvard University.

Nickerson, C. J., & Lynch, L. (2001). The effect of farmland preservation programs on farmland prices. *American Journal of Agricultural Economics, 83*(2), 341-351.

Patricia, L. M. (2006). Policy analysis of transferable development rights programming using geographic information systems modeling. *Landscape Journal*, (25), 228-229.

Patrick, H. T. (1996). Financial development and economic growth in underdeveloped countries. *Economic Development and Cultural Change, 14*(2), 332-346.

Peiser, R. B. (1989). Density and urban sprawl. *Land Economics, 3*, 299-312.

Roddewing, R. J., & Inghram, C. A. (1987). *Transferable development rights: TdRs and the real estate marketplace* (Report 401). American Society of Planning Officials, Chicago.

Thorsnes P., & Simons, G. P. W. (1999). Letting the market preserve land: The case for a market-driven transfer of development rights program. *Contemporary Economic Policy, 17*(2), 256-266.

Zeller, M. (1996). Rural finance for food security for the poor: Implication for research and policy. *Food Policy Review, 4*, 2-56.