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# I. Expropriation, Compensation, and Valuation: ADB Policy and International Experience

**D**riven by the demand for economic development and improvement of the well-being of citizens, governments in every country maintain and exercise the power to expropriate (compulsorily take) private properties for public purposes. While every sovereign state maintains an “eminent domain” power to advance the interest of the public, the government’s action negatively impacts the livelihoods of those whose assets are taken.

Most countries have developed land expropriation or acquisition<sup>5</sup> laws to restrict their government’s exercise of its eminent domain power and have accumulated instructive experience in implementing those laws. Such laws typically: (i) define the cases in which the government can exercise its power; (ii) describe the rights and participation of those persons whose assets are being taken; (iii) define the lost assets for which compensation is payable; and (iv) define the level of compensation that is payable for those assets. Our analysis will focus on the fourth of these topics, but we will also touch upon the first three.

Few countries have developed broader resettlement legislation that applies to land expropriation cases resulting in involuntary displacement and provides for rehabilitation measures as well as compensation. Thus, it is typically the land expropriation laws that often stipulate a government’s legal obligations in situations of involuntary displacement and resettlement. Even when applied to cases that do not involve involuntary resettlement, such laws are often flawed. They are universally flawed—to varying degrees—when applied

to cases resulting in involuntary resettlement, as discussed further below.

Until relatively recently, development-caused forced displacement of a population was considered a “sacrifice” some people had to make for the larger good. The conventional “remedy” employed in projects to respond to resettlers’ dispossession and economic and social disruption was compensation for lost assets. Resettlement programs in general were limited to statutory monetary compensation for land and other assets acquired as specified in the relevant expropriation law. Perceptions are changing, however, in large part because of a growing awareness of the actual and potential adverse social, economic, and environmental consequences of population displacement. Policy makers, planners, and practitioners are increasingly accepting that displaced persons should not bear any of the externality costs and that rather than trying to reduce some of the burden imposed on the displaced, the approach should focus on fully restoring, if not improving, the well-being of project-affected persons (APs).

## A. ADB’s Involuntary Resettlement Policy

As part of this sea of change, ADB has adopted a policy for involuntary resettlement resulting from development projects. ADB’s policy cover a range of issues including, but not limited to, compensation for loss of assets; resettlement of APs; government budgetary planning for resettlement and compensation; institutional framework for involuntary resettlement; and interactions with civil society concerning resettlement.

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<sup>5</sup> “Expropriation” and “acquisition” are used interchangeably in this paper and they refer to the government’s involuntary taking of land and other assets.

The guidelines on compensation for loss of land assets upon expropriation set the bar higher than those set by the statutory frameworks of all developing member countries (DMCs). The guidelines on compensation for loss of assets to land expropriation are outlined below.<sup>6</sup>

1. **Compensation for loss of assets should be determined in such a way that the APs' economic and social future will generally be at least as favorable with the government takings as without them.**

This guideline establishes ADB's bottom-line principle on compensation for loss of assets because of government expropriation: whenever resettlement is unavoidable, APs' livelihood should not be worse off due to involuntary resettlement. Flowing from the bottom-line principle of preventing APs' livelihood from worsening, determination of compensation for lost assets should be based on "replacement value." Replacement rates, according to ADB policy, are "equal to market costs plus transaction costs providing that the markets reflect reliable information about prices and availability of alternatives to the assets lost." Replacement value can mean either replacing the asset with a like asset of similar quality and quantity or with monetary compensation. Thus, the "market cost" in ADB's definition of "replacement value" refers to the "market cost" of the replacement land, not necessarily the land that is lost.

2. **The absence of formal legal title to land by APs should not be a bar to compensation.**

In many Asian countries, rights to land (especially rural land) are poorly documented. Possessors without formalized rights are common, including tenant farmers, customary users, and so-called "encroachers" and "squatters." It is common that long-term possessors with customary rights accepted by the local community do not have formalized rights officially recognized by the government. Many such people who do not have formal legal title to the land to be expropriated nonetheless will be negatively affected by expropriation.

ADB's policy states that all "persons affected" are eligible for compensation irrespective of legal or ownership titles. "APs" are broadly defined as "those who stand to lose, as a consequence of the project, all or part of their physical and nonphysical assets, including homes, communities, and productive lands, resources such as forest, range lands, fishing areas, or important cultural sites, commercial properties, tenancy, income-earning opportunities, social and cultural networks, and activities."

3. **APs should be fully consulted about the compensation and should have basic access to mechanisms for enforcing their entitlement to just compensation.**

APs' access to information, full participation in the expropriation process, and ability to enforce their rights are not only a component of democratic development, but also an effective institutional check on the government's expropriatory power.<sup>8</sup> ADB's policy is to neutralize the power imbalance that exists in the government's favor in land expropriation by empowering the stakeholders to defend effectively their entitlement to fair and just compensation under the rule of law.

Notably important is that in all the three country cases reviewed here, the laws and their implementation fall well short of meeting ADB's standards. Specifically, the legal framework of each country does not provide compensation to all APs at replacement cost. Thus, achieving ADB's standards in the context of all ADB-funded projects involving resettlement in these countries will require supplementing the compensation provided under the local legal regime with other allowances so that the total is equal to the replacement cost of affected assets.

## B. Fair Market Value vs. Replacement Value

Most countries around the world have constitutional and/or statutory standards that call for "market value" or "fair market value" compensation for lost assets that the state expropriates. The distinction between compensation at "fair market value" and compensation

<sup>6</sup> Asian Development Bank's (ADB) policies on compensation for loss of assets are drawn from the ADB *Handbook on Resettlement: A Guide to Good Practice*. 1988. Appendix 1.

<sup>7</sup> Available: [www.adb.org/Resettlement/faq\\_03.asp](http://www.adb.org/Resettlement/faq_03.asp)

<sup>8</sup> Economists have noted the dangers of the in-built asymmetry of information and asymmetry of power embedded in the application by the state of the eminent domain principle. (See Stiglitz, Joseph. 1997. *Principles of Microeconomics*. 2nd edition, 430.) This information and power asymmetry can be at least partially countered with effective notice, consultative, and redress procedures.

at “replacement cost” is often a source of operational confusion. Where (i) markets provide reliable information about prices and (ii) comparable assets or acceptable substitutes are available for purchase, replacement cost is equivalent to “fair market value” of the replacement land<sup>9</sup> plus any transaction costs (such as preparation, transfer, and registration fees and taxes).<sup>10</sup>

In many DMC settings, one or both of the two conditions noted above are not present. In some such settings, particularly remote, rural settings, markets are not sufficiently active to provide reliable information about prices. Even when markets do provide reliable information about the value of the expropriated land, it may not be possible to identify comparable land for purchase.

Even in the presence of both conditions, valuation using the fair market value standard often results in less than market price due to a variety of other factors. In many countries, legal compensation criteria are based on a registered “market value” that underestimates actual market value, so landowners are unable to replace their assets. In many settings, legal compensatory practices do not recognize customary claims that are not formalized (as defined by the state). In other settings, the legal framework recognizes the claims, but compensates them at a discounted value. In some settings, the state places sharp restrictions on the rights of formalized land users—such as the right to sell—which then results in a sharply discounted market value, making it impossible for landowners to replace their asset. In most settings, “market value” compensation refers to the market value of the expropriated land, which for a variety of reasons might not be the same as the market value of land of equal productive potential or use that could serve as a replacement.

## C. International Practice on Compensation for Expropriation

### 1. Fair Market Value

Most countries have constitutional requirements for paying compensation when the government expropriates private assets for public purposes. In the United States (US), the US Constitution requires “just compensation” for all takings of private property.<sup>11</sup> The Philippine Constitution similarly requires that “payment of just compensation must be made.”<sup>12</sup> Brazil’s Constitution also contains a “just compensation” clause.<sup>13</sup> In Cambodia, the Constitution mandates that the state make “fair and just compensation” for taking possession of land from any person.<sup>14</sup>

Some countries have what appears to be a milder constitutional requirement. In the PRC, not until 2004 was the Constitution amended to require the state to make “reasonable compensation” for land expropriation.<sup>15</sup> Before the amendment, the Constitution merely required the state to provide “compensation” for land takings.

Based on constitutional requirements, many countries have developed standards for determining “just compensation.” Most high- and middle-income countries with well-functioning legal systems have adopted “fair market value” of the expropriated asset as the standard for determining compensation for state expropriations. The fair market value is commonly defined as “the amount that the land might be expected to realize if sold in the open market by a willing seller to a willing buyer.”<sup>16</sup> The underlying reason for adopting the fair market value standard is that the market is an objective gauge for assessing the value of the land.

Under the fair market value standard, land expropriation laws in many of these countries provide further practical rules to guide adherence to the

<sup>9</sup> Not the expropriated land.

<sup>10</sup> The fair market value standard used in most developed country settings (including the United States [US]) does not include consequential damages associated with condemnation, such as moving expenses, attorney’s fees, and lost business good will associated the location of the property. (Dana, D., and T. Merrill. 2002. *Property Takings*. New York: Foundation Press).

<sup>11</sup> US Constitution, Amendment V.

<sup>12</sup> Philippine Constitution, Art. III, § 9.

<sup>13</sup> Brazil Constitution, Art. 153, para. 22 (amendment 1).

<sup>14</sup> Cambodian Constitution, Art. 44.

<sup>15</sup> The People’s Republic of China Constitution amendment, art. 10 (2004).

<sup>16</sup> Knetsch, Jack L., and Thomas E. Borchertding. 1979. Expropriation of Private Property and the Basis for Compensation. *University of Toronto Law Journal*, 29(237).

standard.<sup>17</sup> Some countries provide a premium above the “fair market value” because of the involuntary nature of the taking. In a compulsory land taking, the government is a willing buyer, but the affected landowners are often not willing sellers. Some governments have developed a variety of mechanisms to compensate landowners in excess of market value because of the involuntary nature of the taking.

Great Britain provides for special compensation when expropriation of agricultural land disturbs a farmer's operations.<sup>18</sup> Likewise, in Germany, when an expropriation divides or transverses agricultural land, the government must pay additional compensation based on the following: (i) increased time required for the farmer's road travel and preparation of machinery; (ii) damage due to detours; (iii) damage due to increased boundaries on the land; and (iv) damage caused by worsened alignment of the land.<sup>19</sup>

Italian law provides for a high level of compensation and strong incentives for agricultural landowners and users to accept the compensation offered by the state. When agricultural land is expropriated and rezoned for urban uses, the municipality offers compensation of 1.5 to 3 times the government-established average value of similar agricultural land in the locality. This higher-than-market value offer of compensation has

encouraged landowners to accept compensation offers without appeal to the courts.<sup>20</sup>

Although the prevailing practice throughout the world in compensating property owners for their loss is to provide cash compensation, some countries present an asset-for-asset alternative that international development agencies promote. In the US, for example, when the government evicts tenants of substandard housing for development of better housing, the government may provide the tenants with new residences that meet city standards in lieu of cash compensation.<sup>21</sup>

## 2. Valuation Methodology

As discussed above, most countries have adopted “fair market value” as the compensation standard when the government expropriates land. But how is “fair market value” determined? This subsection discusses typical valuation methods used internationally to determine the fair market value of the asset types typically impacted by government expropriations: land, structures on land, crops, and common property resources (CPRs).

### a. Valuation of land

Land valuation is typically achieved through one or both of two basic approaches: comparable sales approach, and/or capitalization or income approach.<sup>22</sup>

#### (i) Comparable sales approach

The comparable sales approach is the most common method of land valuation. It relies on market information to value the land. The underlying concept is that a recent sale from a willing seller to a willing buyer of a property (the comparable property) can best reflect the value of a similar property (the subject property) in the vicinity. This method models the behavior of the market by comparing the subject property under valuation with similar property or properties that have recently sold or for which offers to purchase have been made. It assumes that a rational and prudent buyer

<sup>17</sup> In the US, the government must fully compensate the landowners, putting the owners in a similar position to where they would be if the property had not been expropriated. The determination of market value cannot reflect any changes in the value arising from the expropriation itself. If the announcement of the expropriation causes the land suddenly to become more or less valuable, this change in value is not considered, and the state must pay the market value that existed immediately prior to the announcement. (Ackerman, Alan T., ed. 1994. *Current Condemnation Law: Takings, Compensation, and Benefits*. 55). In Great Britain, the expropriating authority first negotiates with all interested parties to reach an agreement on compensation. If the parties cannot agree, a Lands Tribunal determines the appropriate compensation according to the following principles: (i) no allowance is made since expropriation is compulsory; (ii) the value of the land is deemed to be the amount for which a willing seller would have sold the land in the open market; (iii) the suitability of the land for a special use is not considered if the owner would require statutory approval for that use; (iv) no consideration is given to any item of value related to the use of property that is illegal, detrimental to the health of the occupants, or detrimental to public health; and (v) if it is impossible to determine the market value for a particular piece of land due to the lack of a market for the purpose of the land, the compensation can be based on the reasonable cost of providing the occupier with a comparable piece of land. Some countries, mostly in South America, use land valuation for tax purposes as the basis for determining “just compensation.”

<sup>18</sup> In addition to compensation for the land, if anyone is displaced from an agricultural unit, that person is entitled to a “farm-loss payment,” provided that one: (i) has an interest in agricultural land with at least 3 years remaining; (ii) one loses interest in the land because of the state's expropriation; and (iii) within 3 years, one begins to farm another agricultural unit within Great Britain. Land Compensation Act. 1973. § 34 (Eng.).

<sup>19</sup> Grimm, Dr. Christian. 1998. Rural Land Law in Germany. May. (Unpublished manuscript on file with the Rural Development Institute [RDI]).

<sup>20</sup> Agostini, Danilo. 1998. Rural Land Law in Italy. May. (Unpublished manuscript on file with RDI). Each landowner and user has 30 days to decide whether to accept or reject the offer. The level of compensation for urban land differs from rural land and is based on the following formula: the market value of the land (Vm) plus 10 times the cadastre income (RD) divided by two:  $(Vm + 10RD)/2$ . In practice, this typically leads to compensation that is approximately 40% lower than the market value of urban land.

<sup>21</sup> 26 Am.Jur. 2d, Eminent Domain § 180.

<sup>22</sup> Some observers describe a third approach typically described as “expert opinion,” but expert opinions are typically based on one or both of the other two approaches.

will not pay more for the comparable property, while a seller in the same situation will not accept less for the same property. The sales price finally reached reflects the equilibrium of supply and demand for land in a given market. Therefore, if the subject property under valuation were offered for sale in the same market about the same time, the transaction would be completed at approximately the same price.

The comparable approach requires the following steps: data collection; analysis of market data to develop a group of properties for comparison; selection of attributes for adjustment; application of the approach to adjust the sales prices of comparable properties to the subject property; and analysis of the adjusted sales prices to estimate the value of the subject property.

Data collection involves market research to collect information on the actual transactions, demand, and supply with respect to the comparable properties and the subject property. To do this, the assessor needs to collect the information on recent sales of land plots in the relevant market and verify the transaction information. The information about land covers both quantitative and qualitative aspects, including the area of the land plots sold; sales price and date; land quality and fertility; long-term investments in the land; crops grown on the land; categories of land use (rice paddies, dry land, or wasteland); and restrictions on land use or alienability.

The collected data normally should be verified. The information about the transaction is typically considered authentic when it is obtained from at least one of the transacting parties, an agent, or from a government office where such information is registered. One must always consider the likely quality of the information collected. Such information, particularly from a government office, can be inaccurate when either the buyer or seller or both have significant incentives to overstate or understate the transaction price.

Once credible information on land sales is obtained, the next step is to select the comparable properties. This involves two basic issues: the number of properties to be selected for comparison and the attributes of properties for comparison. While selecting a large number of sold properties for comparison tends to increase the confidence of the comparison result, it will add workload and complexity for valuation work. Therefore, a proper balance must be achieved between the number of comparable properties and the efficiency of the valuation work. Based on international practice, three to five comparable properties is typically sufficient.

The key for selection of attributes for comparison is comparability between comparable properties and the subject property. Comparability measures similarities between them. A rule of thumb is that comparable properties and the subject property should be similar with respect to date of transaction, economic conditions, physical attributes, and competitiveness in the same market. Of all these attributes, competitiveness is most important because if the comparable properties and the subject property do not compete in the same market, the value derived from such comparison for the subject property may be distorted.

The attributes for comparison and adjustment typically include transaction financing, sale terms and conditions, sale time, location, and physical characteristics.

Transaction financing can affect the land price. Sellers will normally accept a lower price when the payment is made in a lump sum than when it is made in a series of payments over time. The terms of financing can also affect price. If the sales of the comparable properties are financed through a bank, the information on amount of downpayment, interest rates, type of loan, loan maturity, and the ratio between the loan and the mortgaged property value must be collected and analyzed for each transaction to disclose the difference between the comparable property and the subject property.

Sale terms and conditions also impact price, but making adjustments based on them is difficult. For instance, where a seller is under pressure to sell the property urgently, or transactions are between relatives or close friends, the land may be sold at a price that is lower than the market prices. On the other hand, the sale may be transacted at a price higher than the market price where the property purchased has some additional personal or family value for the buyer.

The general rule is that any sales of a non-arms-length nature should be excluded from the pool of the comparable properties because the sales price it represents is distorted. A comparable sale is a sale that is completed in an open market through an arms-length negotiation. Where the sale terms of a comparable property cannot be replicated on the subject property, it should not be used for valuation unless these sales terms and conditions can be confidently adjusted. Such non-arms-length sales include: sales involving courts and government entities; sales in which a financial institution is the buyer (such as foreclosure sales); sales between relatives or close friends; sales under

pressure or for convenience (such as sales for reducing the amount of landholding to meet the government's landholding ceilings in some countries), etc.

Sale time is one of the principal elements for comparison. The standard for selecting the comparable properties with respect to sale time is that the shorter the time is between the sale date and the date of comparison, the better the comparable property fits for comparison. This is because inflation and the rise of price index with time elapsed tend to devalue the purchasing power of money at the time of valuation. Moreover, sales prices fluctuate from time to time even when there is no or little inflation. To make the comparable property most comparable to the subject property, the assessor must have knowledge of price changes in recent years.

The fourth element for comparison is the respective location of the comparable properties and the subject property. Farmland values can vary significantly within an area due to proximity to road or residential area, proximity to water sources, geographical access to agricultural extension services, availability of agricultural labors, agricultural production restrictions,<sup>23</sup> etc. It is ideal when both comparable properties and the subject property are in areas with a similarity of these attributes. When this ideal situation does not exist, the value of the comparable properties needs to be adjusted.

The fifth element for comparison is the physical features, including size, shape, plot slope, soil quality, irrigation characteristics, and long-term investments in land. Finding a comparable property that is identical with the subject property is unrealistic. It is enough that the differences in physical features between the comparable property and the subject property are not many or adjustable.

After attributes for comparison are selected, adjustments should be made based on the various attributes to derive more comparable value for the comparable properties. The rule of thumb is that when any of the attributes increases the sale price of a comparable property more than how the market views this attribute, a negative adjustment is made through reduction of the sale price for that comparable property. Conversely, if one of the attributes tends to decrease the sales price of a comparable property more than the average, a positive adjustment should be made accordingly.

Once the attributes have been selected and the adjustment coefficients determined, the assessor could apply the sales comparison. A common approach for conducting comparison is the pair sales approach. It requires that the comparable properties be identical in all attributes, except the attribute being adjusted or that adjustments have already been made for other attributes. Pair sales may be vertical or horizontal. In vertical pair sales, the assessor compares two consecutive sales of the same property—excluding improvements on the property done by the second seller—to get changes in price between two sales. Horizontal pair sales involves two comparable properties, and requires making adjustments for other attributes in the second comparable property to make the two “identical,” except for time. By comparing the two comparable properties in a horizontal pair, the assessor can find the difference in price caused by the time elapsed, and make proper adjustments accordingly.

While the comparable sales approach is preferable in land valuation, it has at least two inherent limitations. First, the approach depends on some amount of land sale market activity. If the land sales market is underdeveloped in the area where the subject property is located, it will be difficult, if not impossible, to find appropriate comparable properties. Second, the comparable sales approach requires the availability of accurate market information. If information about land sales and prices is not routinely recorded or registered, or if any of the concerned parties have significant incentive to understate or overstate the sales price or otherwise distort the information, it may be difficult to use the comparable sales approach.

*(ii) Income or capitalization approach*

The comparable sale approach is not applicable if markets are inactive. Typically, the “thinner” the market, the less accurate the approach will be for determining value. An alternative to the comparative sales approach, typically used in situations where markets are relatively inactive, is called the income (or capitalization of income) approach. It is most applicable to agricultural land and investment properties.

The income approach is based on the principle that the value of an investment property reflects the quality and quantity of the income it is expected to generate over the life of the property at issue. In other words, the value of the land derived from this approach is the estimated present value of future benefits, including streams of incomes during the

<sup>23</sup> In the PRC, for example, growing perennial crops or digging a fishpond is not permitted in arable land located within the zone of a “basic farmland.”

lifetime of the property and proceeds from the sale of the property.<sup>24</sup> The income approach assumes that the owner or potential owner intends to generate income from the land. This valuation approach derives land value by annual net income from the land divided by an estimated capitalization rate.

Under the income approach, valuation of land is accomplished through capitalization. Capitalization is the division of a present income by an appropriate capitalization rate to derive the value of the income stream. This method can be expressed in the following formula:

$$\text{Land Value} = \text{Net Income} / \text{Capitalization Rate} \\ \text{or } V = I / R$$

Using the income approach involves three steps. First, one must collect accurate and detailed information on the annual gross income that the farmer has received from the land and on the total costs incurred by the farmer to generate such income. Second, one must subtract total annual costs from gross annual income to derive the net annual income. The third step—as well as the most important and complicated step—is to identify an appropriate capitalization rate and divide the net income by such a rate to get the value of the land under valuation.

In the first step, the assessor needs to collect all information concerning the landowner's gross income from the land and related costs in the most recent year. Ideally, one will also obtain data for the most recent 2–5 years, especially for agricultural land in areas prone to yield and price fluctuations. In general, a farmer is likely to have an accurate knowledge of crop yields per unit of land and the local market price for such crops, at least for the most recent year. Local market prices vary considerably, so it is important to determine the price the farmer actually received if he sold any of the crops. One must also apply a value to the portion of the crop consumed by the household.

More difficulties typically arise when questioning farmers about the costs incurred for generating the gross income. Farmers often do not keep accurate accounts of the operating costs. Moreover, farmers usually do not account for their labor costs because they are inclined not to perceive their labor spent on the farm as a “cost.” By asking the farmer the local daily rate for hiring an agricultural labor, the assessor

may be able to calculate the labor cost by multiplying this labor rate by the days he worked on the farm for producing that annual income. Farmers may not be able to correctly allocate indirect costs or amortize the cost for long-term investments (such as irrigation wells or land leveling and enduring farm tools or machinery), so the assessor must provide technical assistance. To ask appropriate questions, the assessor must know the specifics of agricultural production and be able to compare the income and cost data obtained from individual farmers with the productivity levels, production costs of neighbor farmers, the averages for the respective region, and the market information.

For the second step, farming costs should include at least the following direct expenses: agricultural inputs such as fertilizer and pesticides, seeds or seedlings if purchased from commercial seedling companies, extension service charges, irrigation charges, labor cost, tax, and farm insurance. Indirect costs should include—but are not limited to—management costs, overhead, if any, and amortized usage for long-term investments and enduring agricultural machinery.

In urban settings, items of information collection may be somewhat different. If the subject property is used as a parking lot, the gross income will be the rental income and any associated incomes as incomes from vending machines and other non-parking services. In such situations, all costs on materials and labor for maintenance and interest, if the property is on a mortgage, should be the direct cost. Management cost and administrative overhead are usually indirect costs and should be amortized.

The third step is determining an appropriate capitalization rate or multiplier.<sup>25</sup> The capitalization rate normally includes both a discount rate and a recapture rate. The discount rate represents the present worth of all future incomes produced by the subject property. The recapture rate represents the annual amount needed to provide a return on the investment over the period the investment is held. If income from a land investment is forecast to be level in perpetuity or level income is forecast and little change is expected in the capital value of the income-producing land, then the recapture portion may not be necessary. In such cases, the capitalization rate is the same as the discount rate.

There are basically two methods to derive a discount rate: direct capitalization and yield capitaliza-

<sup>24</sup> Eckert, Joseph, ed. 1990. *Property Appraisal and Assessment Administration*, 231.

<sup>25</sup> Where the capitalization rate =  $x$ , the multiplier =  $1/x$ .

tion. In direct capitalization, the assessor analyzes the relationship between current year income and sale price of comparable property to come up with an overall capitalization rate. For example, if net income in a given year is \$12,000, and the sale price of the comparable property is \$100,000, then dividing the sale price by the net income gives a discount rate of 12%. The advantages of direct capitalization are simplicity and straightforwardness. However, it is applicable only in settings with active land markets.

In yield capitalization, however, many factors (such as degree of risk and the nature of the income stream) are to be considered by the assessor to develop an appropriate discount rate. The general formula for yield capitalization is:

$$V = \frac{I_1}{1+Y} + \frac{I_2}{(1+Y)^2} + \frac{I_3}{(1+Y)^3} + \dots + \frac{I_n}{(1+Y)^n}$$

Where V is present land value, I is income (or cash flow), Y is the appropriate discount (or yield) rate, and n is number of periods.

The income to be capitalized under yield capitalization and the rate applied should be consistent. When net income is capitalized, the rate should be applicable to the property as a whole.

Compounding interest is often used in deriving the present value of future incomes from an income generating property. Compound interest functions are based on the concept of the time value of money: an amount of money receivable or anticipated as income in the future is always worth less than an equal amount actually in the hand now. Conceptually, it is the same process as valuation of land under the income approach. Therefore, when using the yield capitalization method, the current lending interest rate is often applied as the discount rate for estimating the present worth of all future income streams to be generated by the land.

The advantage of the income approach is its applicability in settings where land markets are not sufficiently active to use the comparable sales method. Even in settings where land markets are sufficiently active to use the comparable sales method, the income approach can provide a check against or confirmation for that preferred approach.

The income approach does have limitations. First, the income approach is not good at reflecting many of the non-income factors that determine land values or prices. Land provides value to its owners for reasons

other than its ability to produce income. Land can and often does have value as a source of status, increased access to credit, increased access to government services, political power, and as a hedge against inflation. Second, if primary data must be collected, data collection can prove difficult and time-consuming. This is particularly true if one must collect primary data from multiple years. And if one only collects data from the most recent year, an atypically good or bad year can substantially skew the land value.<sup>26</sup>

#### b. Valuation of structures

Government expropriations often involve the loss of structures on land in addition to the land itself. If the structures are primarily for investment or income-producing purposes, the income approach is sometimes used. However, for a variety of reasons, the preferred valuation method for structures is usually the replacement cost method.

The replacement cost approach for structures in a typical developed country setting of active markets is based on the theory that the market value of an improved parcel can be estimated as the sum of the land value and the depreciated value of the improvements. In other words, subtracting the land value from the overall value of the house and land will get the value of the house. Its underlying principle is that an informed buyer will pay no more for an improved property than the price of acquiring a vacant site and constructing a substitute building of equal utility.<sup>27</sup>

The replacement cost approach requires estimates of land value, accrued depreciation, and the current cost of constructing improvements such as a house. Depreciation is subtracted from current construction costs to obtain an estimate of improvement value. A land value that reflects the value of the site, as if vacant and available for development to its highest and best use, is added to the value of the improvement.

Applying this method involves several steps. The first is data collection. The replacement cost approach requires descriptive data on the improvements being valued.

<sup>26</sup> Many agricultural settings are characterized by frequent weather and crop-price fluctuations that result in substantially varying net annual incomes from year to year. One coauthor recalls a field interview with a developing country farmer wherein we were trying to obtain "typical" crop yields. The author remarked that the area had experienced a flood during the most recent year and a drought the previous year. When asked when the most recent "typical" year was, the farmer replied, "Six years ago."

<sup>27</sup> Eckert, *supra* note 24(205).

The second step is to determine an accurate cost estimate. Costs consist of all expenditures necessary to complete construction of a house or other building. They are either direct or indirect costs. Direct costs include materials and labor, while indirect costs include labor and the monetary cost of obtaining a building permit,<sup>28</sup> registering the house with relevant government agency, and designing fees if hiring an architect to design the house.

Because the structure subject to valuation may have been built many years ago, it is often difficult to determine the costs incurred when the structure was built. Thus, estimation of costs is often based on “reproduction cost” or “replacement cost.” “Reproduction cost” is the cost of constructing an identical structure by using the same materials and design at the time of appraisal. “Replacement cost,” in this context, is the cost of constructing a substitute structure of equal utility using current materials, design, and standards. A common practice in developed countries is to use the replacement cost method, except for buildings with special significance to the owner, because this method requires less detail and fewer adjustments.

In the US, the unit-in-place cost segregated method is usually adopted when estimating replacement cost for a single property.<sup>29</sup> This method expresses all direct costs of structural component as units. The costs for building horizontal components, such as floors, roofing, and electrical system, are expressed as cost per square foot. The costs for building vertical components, such as wall and interior partitions, are expressed as cost per liner foot. Different materials used in building one component have their own material unit cost and labor unit cost. Unit cost is standard, available in published cost manuals.

For mass appraisal, the comparative unit method is widely used. This method, constructed based on the unit-in-place method, simplifies the estimation process by grouping all itemized direct costs and indirect costs into a composite unit cost expressed in square foot of ground area or floor area or cubic feet of space. The unit cost further breaks down based on quality of the structure and the number of stories. Percentage or lump-sum adjustments for features not included in comparative unit cost may be made with the unit-in-place method.

<sup>28</sup> In the PRC, for example, a farmer must go through a lengthy process to obtain government approval to build a house on his land and must pay the local government for such permission.

<sup>29</sup> Eckert, *supra* note 24(208).

Cost estimations for both single-property appraisals and for mass appraisals attempt to answer the question, “How much does it cost to build the same structure today?”

The third step for valuing structures in most developed country settings is to estimate accrued depreciation. Accrued depreciation is the loss in value from “replacement cost new,” which is defined as the replacement cost as if the similar structure were built as of the date of appraisal. The underlying reason for accrued depreciation is that cost and value are most similar when the structure is new; with time, the structure will suffer physical deterioration until the day it is completely out of use. In a setting with active markets, accrued depreciation will affect the market price of a structure, and compensation reflecting the accrued depreciation will enable the asset owner to purchase a “similar” structure in the vicinity.<sup>30</sup>

Accrued depreciation, expressed in percentage points, is estimated based on interaction of the structure’s economic life, effective age, and remaining economic life.<sup>31</sup> In general, accrued depreciation rate is derived by dividing effective age by economic life, and the value of the structure is calculated by deduction of accrued depreciation from replacement cost new, or multiplying replacement cost new discounted by the accrued depreciation rate. So:

$$\begin{aligned} \text{Depression rate} &= \text{effective age} / \text{economic life} \\ \text{The value of the structure} &= \text{replacement cost} \\ &\quad \text{new} - \text{accrued depreciation} \end{aligned}$$

### c. Valuation of common property resources

The compensation practices in most developing country settings do not provide for compensation for environmental impacts or for customary rights to CPRs

<sup>30</sup> If markets are less active, and similar structures are not available for purchase in the vicinity, the asset owner may be faced with rebuilding a similar structure in the vicinity. In such cases, the “replacement cost” will be more than the depreciated value of the expropriated structure.

<sup>31</sup> Structures typically have a total economic life, which is the period of anticipated economic use of a building, determined at the time of construction. It is often shorter than physical life because many buildings outlive their economic life. Total economic life is divided between effective age and remaining economic life. Effective age is the typical age of a structure as determined by the assessor based on its condition, and serves as the basis for estimating accrued depreciation. Remaining economic life is the number of years remaining in the economic life of a structure. Effective age may be shorter or longer than actual age (the chronological age) of a structure, depending on maintenance, remodeling, and renovation. In other words, if the building is well-maintained or has been renovated, its effective age will be reduced accordingly, thus extending its remaining economic life.

such as forests, grazing land, ground and surface water, fisheries, and changed access to productive resources.<sup>32</sup> In such settings, CPRs typically do not play an important economic role in the livelihoods of APs. Such is not the case for the rural poor in developing country settings where CPRs often play a major role in livelihoods. Not compensating for the loss of such assets would fall short of ADB's bottom-line standard of preventing AP's livelihood from worsening.

The contingent valuation method (CVM), which is infrequently—although increasingly used in developing country settings—may be applicable and appropriate for valuation of CPR losses. CVM is increasingly used to estimate economic values for all kinds of ecosystem and environmental services, although it remains a controversial valuation method. It can be used to estimate both use and non-use<sup>33</sup> values, although our focus here is on the use values.

CVM involves directly asking people, in a survey, how much they would be willing to pay (WTP) for a specific good or service (in this case, access to CPRs) or how much they would be willing to accept (WTA) for the loss of an existing good or service. The method is called “contingent” valuation because people are asked to state their willingness to pay (for obtaining) or accept (for losing), contingent on a specific hypothetical scenario.

CVM is referred to as a “stated preference” method because it asks people to directly state their values, rather than inferring values from actual choices as the “revealed preference” methods do. The fact that CVM is based on what people say they would do—as opposed to what people are observed to do—is the source of its greatest strengths and its greatest weaknesses.

The fact that CVM is based on asking people questions, as opposed to observing their actual behavior, is the source of enormous controversy. The conceptual, empirical, and practical problems associated with developing estimates of economic value based on how people respond to hypothetical questions about

hypothetical market situations are debated upon constantly in the economics literature.

Applying CVM to settings of impending or possible future expropriation presents another important methodological problem: the problem of “incentive incompatibility,” which suggests that basing compensation on losses claimed by the AP gives them an incentive to exaggerate. CVM researchers are attempting to address these problems and are increasingly applying CVM in developing country settings, but they are far from finished.<sup>34</sup>

Despite the problems with using CVM for valuing CPRs, the method does have potential and deserves further experimentation in involuntary resettlement settings, particularly with nonmarketed goods such as CPRs. Recent use of the method in an involuntary resettlement setting in India (Sardar Sarovar Project in the Narmada Valley) demonstrates its usefulness for both CPRs and other lost assets without yielding to the ‘incentive incompatibility’ problem.<sup>35</sup>

#### d. Valuation of crops

Valuation of crops is considerably less complicated than land, structures, or CPRs. Typically, compensation for crops is decided according to the gross market value of the lost crops. Gross market value makes full provisions for owner or user input already expended (labor, seed, fertilizer, etc.) in the event that there is a crop in-ground at the time of acquisition or expropriation.

There are two determinants of gross or full-market value: market rate for the crop and the average annual yield of the crop. The price used to calculate the compensation is the highest market price of the locality of the year, which will give the benefit to farmers who are normally assumed to transport the harvest to get the most attractive prices.

The average annual yield of a crop involves some degree of data collecting and analysis. Local governments typically collect data on average yield

<sup>32</sup> An interesting departure from this practice is Germany's Nature Protection Law, which requires that environmental impacts be offset through the creation of equivalent environmental assets elsewhere. (Pearce, David W. 1999. Methodological Issues in the Economic Analysis for Involuntary Resettlement Operations. In *The Economics of Involuntary Resettlement, Questions and Challenges*, edited by M.M. Cernea. 50. Washington, DC: World Bank.) Similarly, Chinese law requires the creation of equivalent arable land elsewhere for the land that has been lost to nonagricultural uses. See China's Land Management Law (LML), Art. 31.

<sup>33</sup> Non-use or “passive use” values include everything from the basic life-support functions associated with ecosystem health or biodiversity, to the enjoyment of a scenic vista or a wilderness experience, to appreciating the option to fish or bird watch in the future, or the right to bequest those options to your grandchildren. It also includes the value people place on simply knowing that giant pandas or whales exist.

<sup>34</sup> See United Nations Food and Agriculture Organization (UN FAO). 2000. Applications of the Contingent Valuation Method in Developing Countries. *FAO Economic and Social Development Paper No. 146*.

<sup>35</sup> Garikipati, Supriya. 2005. Consulting the Development-Displaced Regarding their Resettlement: Is there a Way? *Journal of Refugee Studies*, 18(3). One of the other findings from this study was that the majority of affected persons (APs), irrespective of their dependence on common property resources (CPRs), were quite willing to accept cash as compensation for the loss of CPRs. This result contradicts previous studies of the same area that identified provision of replacement CPRs as an extremely important precondition for resettlement of persons affected by the Sardar Sarovar Project in the Narmada Valley.

per hectare for each type of crop, and establish a schedule or table on average yield for each locality. In most cases, the irrigated nature of the land and the frequency of harvests per year are considered. However, the government-established figure is typically rebuttable by actual production of a particular parcel of land. For instance, if the landowner or user can provide satisfactory evidence that the average of actual yield for the past 5 years is higher than the government-determined figure, the actual average yield is used as the basis of calculating gross market value.

### 3. Procedural Mechanisms

Most countries with reasonably developed legal systems have adopted procedural guidelines for expropriation of assets that place some significant constraints on state power, help better balance the information asymmetry, and at least partially protect the rights of AP against excessive expropriation and unjust compensation. Effective procedures include the right to receive adequate notice and information, the right to participate and influence decision making, and the right to appeal decisions to independent bodies such as courts.

#### a. Right to receive adequate notice and information

Expropriation statutes in most countries require that the state notify AP regarding the state's plans to expropriate land and to compensate or resettle APs. The specific timing and form of notices varies greatly by jurisdiction.

In the US, property owners are generally entitled to notice and a fair hearing concerning all contested issues of fact and of law before property may be taken.<sup>36</sup> Accordingly, each state enacts statutes containing detailed procedures governing land takings.<sup>37</sup> These

statutes, like the statutory requirements in most developed countries, require the state to notify directly each person who will be directly affected by the expropriation as well as to publish a general notice.

In other countries, the law requires the state to post notice at the land that is proposed for expropriation. For example, in Italy, after the municipality has drafted an urban development plan, it must post for 15 days a copy of the plan that indicates which parcels of land will be expropriated. The municipality does not provide each affected landowner with individual notice, but all landowners can inspect the posted plan to discover the new zone designation of their land.<sup>38</sup>

Often, however, public notice is not enough to convey adequate information about land acquisition and public works projects to landowners and communities. In an attempt to provide more information about projects and property holders' rights, Slovakia passed the Environmental Impact Assessment Act in 1994. This law established Consultation-Information Centers (CICs) "to allow for greater information flow and communication with the negatively affected communities."<sup>39</sup> Consultation-Information Centers were an attempt to remedy various problems of ignorance and misunderstanding that seemed prevalent among landowners, particularly in rural areas, but they have been subject to criticism as they are typically taken over by project proponents to push for their agendas.

#### b. Right to participate and influence decision making

The most neglected part of expropriation procedures is the participation by APs. Overall, the governments should adopt participatory development as a core principle, moving away from compulsory taking or forced relocation to a voluntary, participatory, and negotiated process. Participation by APs in land expropriations plays a crucial role in safeguarding their legitimate interests from being infringed upon by government actions and in helping government to prevent discretionary or arbitrary land expropriations. Given the relatively low levels of education and unfamiliarity with governmental or legal procedures of APs—indigenous or tribal people in particular—the right to participate before the key decisions are made is the key to prevent unjust or even disastrous outcomes.

<sup>36</sup> Dana, David, and Thomas Merrill. 2002. *Property: Takings*, 205. Citing *State of Washington ex rel. Seattle Title Trust Co. v. Roberge*, 278 US 116, 121. 1928.

<sup>37</sup> *Id.* In Washington State, for example, state law requires that anytime an authorized agent of the state intends to acquire land through the process of compulsory acquisition, the office of the state attorney general must present a petition for appropriation to the superior court in the county where the land is located. This petition must describe the property to be acquired, list all owners or other interested parties, describe the purposes for which the property will be acquired, and request a determination of compensation to be paid to all affected owners. At least 10 days prior to the presentation of such a petition to acquire property, the state is required to provide a notice to every person listed as an owner or otherwise interested party. This notice must include a description of the property to be acquired and the time and place where the petition will be presented to the county superior court. Revised Code of Washington (RCW), secs. 8.04.010–020.

<sup>38</sup> Agostini, *supra* note 20.

<sup>39</sup> Burrows, Paul. 1991. *Compensation for Compulsory Acquisition* 21.

Cernea argues that “...participation through consultation with potentially AP is indispensable” and dysfunctional or inadequate communication between decision makers and affected groups is one of the root causes for compensation and resettlement plan failure.<sup>40</sup> Because of this close relationship between stakeholders’ right to due process and their right to just compensation and resettlement, virtually all developed countries have and implement specific legal rules concerning AP’s participation in the process. These typically provide APs with a right to object to decisions and present their arguments either at a public hearing or before an appointed person or both. The statutory rules in some countries require the state to demonstrate that it has negotiated with the APs or that the state cannot obtain the land through methods other than expropriation.

Participation by APs is meaningless unless it can influence decision-making processes. Therefore, many governments have established various forums and channels of different degrees of formality for APs to voice their opinions and to impact on decisions. Some countries require the state to demonstrate that it has actively negotiated with landowners. For example, in Poland, after the expropriating agency notifies landowners of its intention to expropriate their land, the agency must negotiate with the land right holders for not less than 3 months to attempt in good faith to acquire the property through voluntary agreement.

Public hearings are the most utilized strategy to give people access to the decision-making process. In Canada, public hearings are an integral part of the expropriation process. Within 30 days of the publication of the acquisition notice, any person, including those who have no stake in the land to be expropriated, can object to the acquisition.<sup>41</sup> Once an objection is raised, the minister of the acquiring agency must hold a public hearing on the matter.

### c. Right to appeal decisions to independent bodies such as courts

The right of appeal provides APs with an important check against arbitrary or illegal administrative decisions on land expropriations. The right to appeal

varies substantially by jurisdiction in terms of formality and the extent of reviewable issues. Regardless, the reasonableness and adequacy of compensation or resettlement packages is reviewable in virtually all countries and regions.

In the US, the courts of general jurisdiction typically hear cases involving state acquisitions or expropriations. Some countries use specialized land courts or land tribunals for resolving land disputes. Australia, Great Britain, Scotland, South Africa, New Zealand, and Hong Kong, China have all established specialized judicial bodies to handle land disputes. The governments have instituted land courts to deal with recurring problems. Presiding judges have special expertise in land cases that ensures judicial proficiency on land issues and promotes consistency in decisions that, in turn, allows for predictability for future claimants.

#### Box 1: Land Tribunal in Hong Kong, China

The Hong Kong Land Tribunal has jurisdiction over disputes covering both agricultural and nonagricultural land. It has both original and appellate jurisdiction over any claim to determine the amount of compensation owed by the government due to a compulsory expropriation or acquisition. The Tribunal may grant both legal and equitable remedies like a court of general jurisdiction.

The Tribunal may appoint any expert who has specialized knowledge or experience in a particular subject to assist the member in the proceedings before it. The Tribunal must advise the parties of the nature of the advice given by experts in any hearing, and must give parties the opportunity to contest the advice before the Tribunal renders its decision.

Decisions of the Tribunal are typically final. A party has two limited options for further review. First, a party may appeal to the general Court of Appeals, which is not a specialized land court, on the ground of law—that is, issues such as whether a law is correctly interpreted or applied, but not any factual disputes. Second, the Tribunal may decide to review its decision (within one month of its decision) on any grounds it deems sufficient. The Tribunal may initiate this internal review upon application of one of the parties or on its own motion.

Source: Rural Land Tribunal Project Proposal, Rural Development Institute (RDI) memorandum on file with RDI, 2001.

<sup>40</sup> Cernea, Michael. 2000. Risks, Safeguards, and Reconstruction. In *Risks and Reconstruction: Experiences of Restlers and Refugees*, edited by M.M. Cernea and C. McDowell. 51. Washington, DC: World Bank.

<sup>41</sup> Expropriation Act. 1985. § 10.