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**THE DRIVING FORCES
OF LAND CONVERSION**
Towards a financial
framework for better
land use policy

**LES MOTEURS DE
LA CONVERSION
DES TERRES**
Vers un cadre financier
pour des politiques
visant une meilleur
utilisation des terres

**FUERZAS MOTRICES
DE LA CONVERSIÓN
DE TIERRAS**
Búsqueda de un
marco financiero para
mejorar la política de
utilización de la tierra



ABSTRACT

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IMPUESTOS SOBRE LA PROPIEDAD DE LA TIERRA

This article analyses some important economic drivers of land conversion, illustrated by examples in Germany, China and Cambodia. Despite differences in how problems manifest themselves, and in governance and institutions, some patterns of failure are essentially the same.

The process of land use change is often actively driven by strong and well-organized beneficiaries. The costs of conversion are to a large extent externalized, e.g. to poorly organized groups or to society as a whole. In order to avoid the problems of such externalities, this article suggests that a better coupling of benefits and costs is necessary. If society bears a significant share of the costs of land conversion, it

Le présent article analyse quelques moteurs importants de la conversion de terres, illustrés par des exemples provenant d'Allemagne, de Chine et du Cambodge. Bien que les problèmes se manifestent de façon différente et que l'on observe des disparités en matière de gouvernance et d'institutions, certaines successions d'échecs sont fondamentalement identiques.

Le changement d'affectation des terres se déroule souvent à l'instigation de bénéficiaires forts et bien organisés. Les coûts de cette conversion sont externalisés dans une large mesure, par exemple, vers des groupes mal organisés ou la société dans son ensemble. Afin d'éviter les problèmes que posent de telles externalités, le présent article

En este artículo se analizan algunos importantes factores que impulsan la conversión de tierras, ilustrados con ejemplos procedentes de Alemania, Camboya y China. A pesar de las diferentes formas en que se manifiestan los problemas y de las diferencias de la gobernanza y las instituciones, algunas pautas del fracaso son esencialmente iguales.

El proceso de cambio de la utilización de la tierra es impulsado activamente con frecuencia por beneficiarios fuertes y bien organizados. Los costos de la conversión recaen en gran medida en partes externas, por ejemplo grupos mal organizados o la sociedad en conjunto. A fin de evitar los problemas causados por esa circunstancia, en este artículo se sugiere que es necesario establecer una mayor



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should also reap the benefits, e.g. via a suitable property tax on land.

At present, local governments' revenues depend heavily on changes to land use. In order to turn local governments into more neutral actors in land use policy, they should not be direct beneficiaries from land use changes. Instead, the revenues from land taxation should be integrated into a financial equalization scheme and redistributed to the municipalities.

suggère d'améliorer le couplage des bénéfiques et des coûts. Si la société supporte une part significative des coûts de la conversion des terres, elle doit également en retirer les bénéfiques, notamment par le biais d'un impôt foncier approprié.

Actuellement, les revenus des autorités locales dépendent fortement des changements d'affectation des terres. Pour devenir des acteurs plus neutres des politiques d'utilisation des terres, elles ne doivent pas être les bénéficiaires directs de ces conversions. Au lieu de cela, les recettes issues des impôts fonciers doivent être intégrées à un plan de péréquation financière et redistribuées aux municipalités.

correspondencia entre los beneficios y los costos. Si la sociedad corre con una proporción significativa de los costos de la conversión de tierras, debería también recibir los beneficios, por ejemplo mediante impuestos apropiados sobre la propiedad de la tierra.

Actualmente los ingresos de las administraciones locales dependen considerablemente de los cambios en la utilización de la tierra. Para que las administraciones locales lleguen a ser partes más neutras respecto de la política de utilización de la tierra, no deberían beneficiarse directamente de los cambios en la utilización de la tierra. En cambio, los ingresos procedentes de los impuestos sobre la tierra deberían integrarse en un sistema de compensación financiera y redistribuirse a las municipalidades.



INTRODUCTION: TWO TYPES OF LAND USE CHANGES

Unsurprisingly, land use problems usually arise when there are significant changes in land use. Land conversion often goes hand in hand with problems such as evictions, loss of farmland, food security problems and other issues. This article outlines the driving forces of changes in land use. The findings are illustrated using the examples of Germany (as an industrialized country), China (as a threshold country) and Cambodia (as a developing country). The article will focus on two important types of land use changes, although there are others.

The first is the conversion of agricultural land into land used for settlements and traffic. For example, in the People's Republic of China, the per capita area of arable land decreased from 1.59 mu in 1996 to 1.39 mu in 2006 (15 mu = 1 hectare; Zou and Oskam, 2007, Jiang *et al.*, 2008). The government has fixed a minimum of 120.0 million hectares (1.80 billion mu) in order to guarantee food security (Jiang *et al.*, 2008). In Germany, the average growth of areas used for settlements and traffic was between 113 ha per day (2003–2006) and 129 ha per day (1997–2000) (German Federal Parliament, 2008). The largest portion of converted land was farmland. The German Government declared a target to reduce daily conversion to 30 ha per day by 2020 (German Federal Parliament, 2007). Issues such as ecological degradation, rising infrastructure costs due to urban sprawl, and the provision of minimum service infrastructures in remote areas for elderly people and children, are the most important aspects under discussion (Köck *et al.*, 2008).

The second type of land conversion discussed in this article is the result of agro-industrial investments. Plantation or industrial farming – involving high specialization, high input of capital, mass production and application of modern techniques – is completely different from small-scale farming. Agro-industrial investments may be carried out by domestic companies, by foreign direct investors, or as joint ventures between domestic companies and foreign investors. In Cambodia, so-called 'Economic Land Concessions' (ELCs) were created by the Land Law (2001) and Sub-Decree No.146 (2005) for this kind of investment. ELCs are long-term leases that grant land for

Land conversion often goes hand in hand with problems such as evictions, loss of farmland and food security

agro-industrial or other economic exploitation (Art. 49, Cambodian Land Law 2001). The Cambodian Government claimed that agricultural development was a priority, citing the aims of ensuring food security, providing raw materials for industry, increasing exports and creating employment. However, issues of concern arising from the law include dislocation, land concentration and – despite the government's aims – food security (Sokheng, 2009).

It is not only the manifestation of land conversion problems that are quite different in the countries studied, but also their governance (Tan *et al.*, 2009). The purpose of this paper is to show that, despite these differences, some patterns of failure are essentially the same. In section 2 we analyse the driving forces of changes in land use. The section focuses on the problem of external effects and bargaining power. It also examines the role of local governments, who can hardly be considered neutral actors. Section 3 presents proposals on how to solve the problems. It will highlight the role of a property tax on land and of the property tax assignment (financial equalization scheme) in changing the behaviour of the municipalities. Section 4 provides a brief outlook and draws some conclusions.

ANALYSIS: WHO BENEFITS AND WHO BEARS THE COSTS OF THE CONVERSION?

Land rent and incremental value

Normally, land use changes go hand in hand with higher land rents and an incremental increase in land value. On the basis of Ricardo's capitalization formula, the value of land V can be explained by the discounted land rent: $V = R/i$, where R is the annual rent and i is the discount rate. In a more complex explanation, the flexibility value of an unimproved site could be added in order to obtain an 'extended present value'; the real-option approach does this (Holland *et al.*, 2000). The land rent can be explained as a 'differential rent', which is a function of location (von Thünen, 1826), the quality of the land (Ricardo, 1817 / 2004) and differences in the intensity of cultivation or use. Rents on unimproved land are generally not based on labour input, but on random factors such as location and quality.



These theories were originally created for agricultural land, but they can be applied to any kind of land if certain modifications are made. The most important realization for our purpose is that any R is much higher for construction land (e.g. settlements, industrial areas) than for agricultural land. In addition, at least in developing countries, R is also often higher for agro-industrial production – i.e. cash crops, which are often exported – than for growing food crops for subsistence or local markets. Because of the increase in R , these types of land use changes cause the value of land to increase incrementally. Having said this, the development of the land also costs money. Thus, the developer's or foreign direct investor's profit does not amount to the total incremental value. Instead, they use a part of the incremental value in order to cover the costs of planning, servicing (infrastructure) and selling. However, normally there is enough profit involved to make the investment worthwhile; this holds for developing rural to urban land as well as for developing infrastructure connected with agro-industrial investments. In Cambodia for example, land is often given to long-term leaseholders almost for free. As an illustration, in Kampong Cham Province the price of one hectare of agricultural land peaked at US\$ 2000 in 2007.¹ Nevertheless, the fees for land concessions were only between US\$ 0 and US\$ 10 per ha per year. Hence, even if the costs of private provision of infrastructure and other expenses are taken into account, the value of the land (e.g. calculated by using the residual value approach) and the rents of the improved land are definitively higher than the (discounted) fees paid. This demonstrates that in reality, the government subsidizes the holders of ELCs.

External effects

From an overall economic point of view, land use changes only make sense as long as the marginal social benefits exceed the marginal social costs of land conversion. Hence, higher rents and values, if caused by land use changes, are not an issue of concern *per se*. Yet from an economic

¹ Interview with Dr Tep Makathy, GTZ consultant, Phnom Penh, October 2009. Due to the economic and financial crisis, prices decreased by circa 35 to 40 percent in 2009.

viewpoint, all benefits and costs have to be taken into account, not only the private benefits and costs. In section 2.4, we will see that many of the benefits of land use changes are often reaped privately, e.g. by landowners and developers, as is often the case in Germany, or by local governments, as is often the case in China (Tan *et al.*, 2009). According to the findings of the New Political Economy and Public Choice Theory, the leaders of the local governments are also utility-maximizing agents, who do not primarily pursue an optimizing of the common good, but rather individual benefits (see section 2.3, cf. Cullis / Jones, 1998).

In western democracies, local leaders may not be re-elected in the event of poor economic performance indicators. In China, urbanization and industrialization are regarded as indicators of strong performances by local leaders, who want to be promoted within the party hierarchy (Ding, 2004). Economic development is also an important political target in Cambodia. However, applications for ELCs have to be approved at central government level by the Ministry of Agriculture, Forestry and Fisheries (MAFF). From September 2008 onwards, only the MAFF has the authority to grant ELCs. Since September 2008, provincial or local authorities are no longer involved in the application process (Sub-Decree No. 131 on the Modification of the Sub-Decree on Economic Land Concessions, Article 1).

External benefits of land use changes also have to be taken into account. Private investments may create jobs and increase the income of local people. The private provision of infrastructure as a precondition for economic development is particularly important if the state is too weak or unwilling to do this. Furthermore, foreign direct investments lead to export revenues and thus have a positive impact on the national trade balance. Such aspects are strong arguments in political debates and also play a role in the decision-making of local governments. However, blanket subsidies (e.g. low leasing fees for ELCs) are not an adequate compensation for such external benefits – instead there should be clear and transparent compensation rules in order to contribute to good governance.

A larger issue concerns how the costs of land use changes are distributed. Most countries have regulations to shift at least a part of the direct costs of land use changes to private actors. In China, the up-front payment for leasing land



also contains an urban infrastructure fee as well as a community infrastructure fee (Deng, 2003). In Germany similar land improvement contributions have to be paid. In Cambodia there are no such regulations yet. In the future, the Cambodian municipalities and communes will be entitled to limited value capture. In addition, to ensure the development of local infrastructure, landowners will be forced to take on some of these infrastructure costs.

Nevertheless, there is some evidence to suggest that such contributions only cover a fraction of the costs of the technical and social infrastructure that result from land conversion. In Germany, municipalities often push for the zoning of new development areas. However, in many cases higher administrative levels, such as district or municipality associations, are in charge of the provision of hospitals, schools and other social services for the new development area (Federal Office for Building and Regional Planning, Germany, 2006). In this way an important part of the costs of land use changes, which are initiated by municipalities, are shifted to higher administrative levels. Comparable effects probably also occur in China and Cambodia, despite their different institutional backgrounds.

Even more attention should be given to the opportunity costs of planning. Private investment decisions are considered efficient because private investors normally take private opportunity costs into account. For example, in a net present value calculation, the discount rate serves as such an opportunity cost rate. Hence, the investor always compares the performance of the intended investment with the performance of the next-best investment alternative. However, planning decisions too have opportunity costs, not only private investments. If the land use plan favours a certain use (e.g. settlement), other uses cannot be realized (e.g. commerce or agriculture). Almost all uses of land compete with each other and are associated with opportunity costs. Whereas private investors and local governments reap many of the economic benefits of land use changes (incremental value, higher land rent), they often do not take the social opportunity costs into account. Instead, the opportunity costs are externalized. In addition, external consequences such as degradation of the environment and loss of biodiversity can also be interpreted as lost social benefits, i.e. social opportunity costs.

Private investors and local governments often do not take the social opportunity costs into account

Here are a few examples of different types of externalized costs:

In Germany, urban sprawl causes an increase in costs for social and technical infrastructure. Growing land consumption is also decoupled from population growth: Germany's population growth is stagnant or shrinking and the average age of the population is rising. Fewer and fewer working people are obliged to cover a rising burden of costs – for underused infrastructure (Löhr, 2008).

In China compulsory expropriations involving little or no compensation have been a major issue of concern in the past. These expropriations have been connected with relocations that caused many difficulties for the relocated people, as well as for the government (Guo, 2001).

In Cambodia, dislocations, land disputes, deforestation and ecological degradation due to cash cropping in large-scale monocultures have been reported (World Bank, 2009).

In general there is a lack of transparency concerning the total measurable value of the externalized costs. Nevertheless, the examples show that land use policy suffers from a general decoupling of the marginal benefits and marginal costs of land use changes, because private and social costs are not equal.

TODAY'S MARGINAL BENEFITS AND MARGINAL COSTS	PRIVATE INVESTORS AND LOCAL GOVERNMENTS	PUBLIC / STATE
Benefits	Sharing land rent and incremental value	Limited public participation, different intensity
Costs	Bearing only a fraction of direct infrastructure costs	Mainly opportunity costs and indirect infrastructure costs
Consequences	Externalities and pressure to convert even more farmland	

Table 1
Decoupling of the marginal costs and marginal benefits of changes in land use



This decoupling of benefits and costs is like an invitation to the beneficiaries for a free lunch. Lobbying and pressure on the authorities to push land use changes are supported. Corruption is considered a major problem, and not only in developing countries. In an overview of the Global Corruption Barometer, land services are ranked third in the corruption scale (Transparency International, 2009).

Local land use planning cannot be neutral

In order to optimize social welfare, theoretically all benefits and costs of land use changes could be assessed in order to make optimized land use decisions. However, the reality is quite different: The decision about land use changes has to be made during the planning process, due to the difficulties in assessing external effects and because of other problems. The planning process should be neutral – the competing claims of the various stakeholders should be balanced in order to optimize the common good. Both Germany and China have a legal basis for a spatial planning system: for example, the Federal Planning Act (Raumordnungsgesetz) and Federal Building Code (Baugesetzbuch) in Germany, and the Land Administration Law and the new Property Rights Law in China. China has even passed some important legislation in order to preserve China's farmland, including the Basic Farmland Protection Regulation or the New Land Administration Law (Ding, 2004). These laws propose a so-called 'zero net loss farmland policy' and seek to protect environmentally sensitive and agricultural lands. A comprehensive spatial and land use planning system is not yet in place in Cambodia, although land use planning at communal and district level (e.g. in Battambang) has been piloted.

Considering in particular the local governments of Germany and China, many important goals of the planning regulations have not been achieved (uncontrolled land conversion, cf. section 1). In fact, despite the differences in planning systems (which reflect the characteristics of the political system) the lower levels in both countries are crucial in implementing the higher-level plans. However, as mentioned in section 2.2, local governments and local politicians may pursue their own interests and do not always attempt primarily to optimize the common good.

In China, local economic development is a main political objective of the local government. Local officials are easily tempted to sacrifice farmland or rural development to achieve a higher rate of economic growth (Ding, 2004), because urbanization and industrialization are regarded as indicators of strong performances by local leaders. Hence, developers are particularly distinguished guests in the eyes of local government officials. Often the local cadres' demand for land development is far beyond the supply of projects proposed by developers. In order to encourage developers to invest in their region, local government officials will offer them land use rights on very favourable terms. As a result, the actual price of the land use rights will be a discount on the real land value. Furthermore, local officials have strong incentives to subsidize local state-owned enterprises by granting them land at nearly no cost (Deng, 2003).

In Germany, local politicians want to be voted into office again. In order to achieve this, they try to attain financial benefits for the municipality. Revenues from taxation or from the financial equalization scheme may rise if the number of inhabitants increases, or if local authorities attract new companies to their area. As a result, local authorities are tempted to change the zoning in order to increase the supply of land.

In Cambodia, agro-industrial investment plays a role for the Royal Government, but not so much for the municipalities.

Seeking land rents and incremental value, some strong actors try to lobby and manipulate local government in order to influence its policies. Sometimes these strong actors even attempt to 'capture' local governments in order to turn them into their agents, using both legal and illegal means. A 'captured' local government is no longer a neutral trustee of the common good. Furthermore, there are financial interests common to the local government and the external actors: The local government also depends strongly on land use changes. In Germany this occurs mainly through taxation or the financial equalization scheme. In China, the development itself is also an important source of revenues. In Cambodia, the government hopes that agro-industrial investors will also develop remote areas by supplying infrastructure. Furthermore, it hopes to create additional tax revenues in the future (RGC, 2008).

A 'captured' local government is no longer a neutral trustee of the common good



Hence, when local governments in Germany and China play an important role in the land planning process, they cannot be considered as neutral actors. Meanwhile in many developing countries such as Cambodia, the municipalities cannot be considered as driving forces of land conversion due to a lack of capacities and formal power.

Power and interests: Captured governments

The analysis provided so far enables us to identify the winners and losers of the game: Developers, enterprises and local governments often represent powerful and well-organized groups with common interests, that act in close collusion. These powerful actors share the incremental value they have generated by converting the land.

Meanwhile, the costs of land use change are shifted to poorly organized groups. The larger the group, the more difficult it is to organize and protect its interests (Olson, 1965). Hence, a major part of the social costs of land use change are shifted to poorly organized groups, which lack bargaining power. In China, the peasants' cooperative is a loose organization without strong common interests (Cui, 2009). Peasants have hardly any political bargaining power when land expropriation is underway. The Communist Party of China (CPC) Central Committee made some important decisions on 12 October 2008 that sought to advance farmers' user rights, allowing them to transfer or sublet their rights (China Daily, 2008). These efforts seek higher participation of farmers in the incremental value of land. However, there is a trade-off: Greater participation of peasants in the incremental value will ease the social bias, but the farmers themselves will then become promoters of farmland conversion. The situation could turn out to be similar to that in Germany: Here, it is farmers who mainly benefit from farmland conversion, since they are the owners of the sites. The value of the converted land may easily be 20 to 50 times higher than the value of farmland (Tan *et al.*, 2009). In the event of successful conversion, the value of a farmer's property could increase significantly overnight. Together with other organized groups, some farmers are lobbying politicians in order to pursue their individual interests; in so doing they do not always use the legal channels that would form a normal part of a wider process of

participation, involving all interested parties. An amicable cooperation between local governments, farmers and investors is quite common. Despite this, the conversion process does not create a win-win situation for society as a whole. A loss of biodiversity and of farmland, urban sprawl with rising costs of infrastructure, and falling prices of existing houses in some regions, are just some of the consequential social costs.

Meanwhile in Cambodia, private investors often fill in for the absent regulative power of the state: As described above, ELCs are the main legal instruments for investments in agro-business. Sub-Decree No. 146 on ELC (Art. 4 and 5) stipulates that environmental and social impact assessments have to be completed in accordance with the planned new land use, and that public consultations must be conducted with local authorities (e.g. Commune Councils) before starting the ELC project. However, ELCs can also be granted through 'unsolicited proposals', whereby the investor proposes an outline for the project, including planning and construction materials. These proposals come about because of a lack of land use planning documents and because authorities also lack the capacity to follow the requirements mentioned in Sub-Decree No. 146.2 Generally, investors can be expected to promote their individual interests, which are not always in line with the common good. The consequences of this include land disputes, evictions and rising landlessness: these costs are shifted to the most vulnerable groups in society.

Society as a whole is the most poorly organized group, and the most difficult to organize. Hence, external costs are often shifted to society, although sometimes there is resistance from *ad hoc* subgroups such as 'NIMBY' groups – "not in my back yard" – that may form to protest a particular cause. This holds true in western democracies, where parties – as the name suggests – represent only particular interests and not the interests of society as a whole. We conclude: The winners of land use changes (higher land rent, incremental value) are mostly small and well-organized groups that work in close collusion with local governments in order to gain from the conversion of land.

The winners of land use changes are mostly small and well-organized groups that work in close collusion with local governments

2 Interview with Robert Deutsch, GTZ consultant, Phnom Penh, October 2009.



Too many regulations

Individual decision-making by private actors does not necessarily lead to an optimal outcome for society. This is an important result of game theory that also holds for land use policy. It is not only rent seeking that may alter planners' ideas. Blockades and an unwillingness to cooperate on the part of landowners also pose severe problems. Regulation is required in order to bring the actions of private-sector actors in line with the plans and the intentions of the law, i.e. to define good land use policy.

Table 2 illustrates that good land use policy is not compatible with a full bundle of property rights. A completely privatized ownership title may be interpreted – from an economic viewpoint – as encompassing all four sets of rights mentioned below (Pejovich, 1990; the following economic classification is abstract and derived from Roman law):

EXCLUSIVE RIGHTS, BASED ON VALUE AND RENT	... CONTROL AND USE
Asset (stock)	Right to sell the asset and to participate in its value (disposal). Latin: <i>ius abutendi</i>	Right to control and to change the asset according to one's needs. Latin: <i>abusus</i>
Utility (flow)	Right to appropriate any returns on the asset. Latin: <i>usus fructus</i>	Right to use the asset. Latin: <i>usus</i>
Controlling of the behaviour of the private investors	Traditional way: e.g. purchasing consents. Alternative way (cost-by-cause principle): Negative economic incentives, such as taxation or leasehold.	Traditional way: Regulations.
Consequence	Dilution of the rights due to value and rent (cost-by-cause principle).	Dilution of the rights due to control and use.

Table 2
**Dilution of property rights
(from an economic point of view)**

In order to bring the actions of private-sector actors in line with the plans, authorities need to control the behaviour of these actors, either by diluting property rights based on value and rent, or by diluting them based on control and use. The traditional approach to regulation is to introduce many rules, and grant as many rights as possible to private-sector actors based on value and rent. For example, in Germany many regulations and public bureaucracy impact on *usus* and *abusus*. Building orders (§ 176 Federal Building Code – Baugesetzbuch, BauGB), modernization orders (§ 177 BauGB), development reduction orders (§ 179 BauGB) and compulsory purchase in relation to urban development plans, are just some examples of regulations put in place to bring the behaviour of the owners in line with the land use plans. Indeed, this kind of regulation is nothing less than a dilution of private property rights through public law (Dieterich, 2001). Hence, from an economic point of view, the so-called 'full ownership title' is anything but full.

However, the burden of bureaucratic costs that are connected to this kind of regulation indicates weak governance. Additionally, the regulations still cannot achieve their goals as long as there is a strong counteracting force based on the decoupling of benefits and costs of land use change.

An alternative method would be to create regulations and negative economic incentives, such as a suitable property tax or a suitable leasehold system. From a regulatory policy viewpoint, these economic incentives should indeed be negative: Landowners should not be rewarded for not damaging society; instead they should be punished if they damage society (the costs-by-cause principle). Otherwise, the price of a good land use policy is unaffordable. Furthermore, such a policy does not solve the fundamental problem of the decoupling of the benefits and the costs of land use changes.



INSTITUTIONAL CHANGE

A better coupling of benefits and costs: A site value tax on land

Creating appropriate legislation and planning systems is necessary, but not enough. Land use policy has to be based on at least two pillars – the second pillar is a suitable economic framework. Considering the pressure private investors exert on authorities in order to achieve land use changes, institutions have to be created to counteract the damaging externalization phenomena. The benefits of land use changes should be coupled inextricably to their costs.

One way to achieve this would be to assess the externalized costs as quantitatively as possible and then to internalize them, e.g. by taxation. However, the assessment of externalities is difficult, expensive, and always a source of debate.

A better solution would be to allocate the lion's share of the benefits – the (discounted) land rent – to the public, since the public bears a large proportion of the costs of land use changes. This could be achieved by a site value tax or a sensible leasehold system. The structure of the tax would not be the same as with an internalization approach: The target of the site value tax would not be the internalization of external costs, but rather the transfer of a significant share of the land rent from the private-sector actors to the public / state.

This kind of tax was promoted intensively by Henry George in 1879. Even before George, in 1817 David Ricardo also thought about taking advantage of land rents via taxation. In the remainder of this section it will not be possible to discuss the whole spectrum of the tax discussion, which potentially has infinite permutations; only some limited but key remarks will be made suggesting a suitable tax base and tax rate.

A. Tax base

The tax base can be compound, i.e. applying the tax on the value of land plus the value of the buildings on it, or isolated, i.e. applying the tax only on the value of unimproved land, without fixtures, buildings etc. Beginning with Ricardo, a differentiation has been made between land (alone) and

The benefits of land use changes should be coupled to their costs

capital (improvements on land), as a tax base. Many land use management experts agree that taxing unimproved land alone will support land use policy (this is explained further below). These experts believe that a compound tax base discourages efficient land use: The better the use of a site – through the addition of buildings and other fixtures – and the higher the resource efficiency, the higher the tax. (For a further critical analysis cf. Evans, 2004; Evans does not always agree with the conventional economic viewpoint, which stems from Henry George.)

There are also different views concerning whether the perceived overall value of an unimproved site should be taxed or whether, quite simply, a fixed tax per square metre should be applied (and there are also views promoting mixed solutions). Certainly, the latter would be the simpler alternative. Supporters of this approach claim that the relative costs of using sites in suburbia – compared with settling in the city centre – would rise because of the initial lower land prices further out of town. They also claim that a fixed tax per square metre would help to stop suburbanization tendencies.

However, the author of this article believes these arguments are misleading. A critical response is illustrated below using the simplifying capitalization formula. Let us first consider the effects of a fixed tax per square metre. Without taxation, the annual land rent in a city centre is \$US 10 / sqm. In the suburbs the rent is only \$US 5 / sqm. Discounted with 5 percent (terminal value) gives values of \$US 200 / sqm in the centre and \$US 100 in the suburbs. Now let us introduce a uniform tax of \$US 1 / sqm and suppose that it cannot be shifted, due to the fixed-cost nature of the tax (although in reality, this assumption will not hold completely). The results are as follows:

FIXED TAX PER SQM	WITHOUT TAXATION (\$)US	WITH TAXATION (\$)US
Centre	200	180
Suburb	100	80
<i>Price ratio</i>	<i>2 : 1</i>	<i>2.25 : 1</i>

Table 3
Effects of a fixed tax
per square metre of land



So even though the pressure of the current costs is higher in relative terms in suburbia, the sites in suburbia actually become cheaper in relative terms. The first effect (higher current costs, in relative terms, in suburbia) decreases suburbanization tendencies; the second effect (lower prices of suburban sites in relative terms) increases these tendencies. So which effect will dominate? This depends on the capital markets. In reality, capital markets are incomplete. Liquidity matters, as it is always good to have cash available. Equity also matters, because normally an investment cannot be financed 100 percent by debts. Hence, the investment strategy that provides more actual liquidity and grants a higher rate of equity is preferable. This is why the dominant effect will be decreases in prices in suburbia, in relative terms. The cheap land in suburbia will be preferred. Hence, suburbanization would actually be supported by this tax, rather than hindered by it. Furthermore, regarding land as a real option, such a tax also creates pressure to exercise the option ('dividend'), particularly in low-price areas. This causes pressure to speed up the conversion of farmland in remote areas (Löhrr, 2008).

Before we are able to judge the effects of the site value tax, we must take a look at the formula. We need to take into account that the value of land as a tax base is reduced by the tax itself. Hence the formula is (Lemmer, 2004):

$$V = \frac{R}{i + t}$$

where R is the land rent (before taxation), i is the real interest rate (deflated) and t is the tax rate. The net value V (with taxation) is the rent R (without taxation) divided by the discount rate r plus the tax rate t .³ We assume a discount rate of 5 percent, a tax rate of 1 percent (on the value of land), a rent of 10 \$ / sqm (centre) and 5 \$ / sqm (suburbs). Hence, we arrive at:

³ The formula shows that the proposal made is only a dilution of Henry George's idea: For technical reasons, such a tax could not achieve the goal of skimming off the whole land rent: Because $R > 0$ and i may be some 3 to 5 percent in the long run, t would have to approach infinity in order to bring the value V to zero.

FIXED TAX PER SQM	WITHOUT TAXATION (\$/US)	WITH TAXATION (\$/US)
Centre	200	166
Suburb	100	83
<i>Price ratio</i>	<i>2 : 1</i>	<i>2 : 1</i>

Table 4
Effects of a tax on
the value of land

Immediately we see that the tax on the value of unimproved land is completely neutral: it does not affect the price ratio.

The assessment of the tax base could be carried out by committees according to the blueprint of the German land assessment boards ('Gutachterausschüsse', § 192 BauGB), which are public land assessment agencies. These boards collect data on all land transactions and set out annual guiding values of unimproved land (Bodenrichtwerte) for zones of plots that share similar characteristics. These guiding values are also used for taxation purposes. Without a doubt, a great deal of time and effort is required to build the capacity for doing this. Development assistance for threshold and developing countries should emphasize this point, and suggest a clear blueprint for the function of the boards.

B. Tax rate

A fixed tax rate always means the same tax burden on the owner. The owner of the land cannot avoid the tax burden: it has the character of a fixed cost. The only way to lower the effective burden of the tax is to use the site efficiently, according to the plan.

The situation is different if the tax rate depends on the effective use of the site. For example, in Germany proposals have been made to levy different tax rates according to the ecological quality of land use (Bizer / Lang, 2000). In this case, the costs of the tax are no longer fixed for the owner of the site. The supply curve of land, derived from the marginal costs of land supply, may be flatter, in which case the owner is able to shift the tax, e.g. to the tenant. The effectiveness and efficiency of the tax suffers as a result. Furthermore, local authorities are incentivised to stimulate those uses of sites that would make the most money (in the case above, the uses with the worst ecological impacts). In order to avoid these effects, the tax rate should not depend on the way the land is actually used (Lemmer, 2004).



The proposed fixed tax rate on the value of unimproved land leads to greater neutrality in planning decisions: If the tax has the character of a fixed cost, it cannot be shifted. If parts of the land rent are skimmed off by such a tax, the economic value of land for the private sector will decrease (see the formula above). In addition, the incremental value due to land use changes will be lower. If the tax rate is high enough, it may burst land price bubbles and prevent speculation (see the formula above, cf. Dieterich, 2004 and Erlandsen *et al.*, 2006).

In China, Shanghai is especially affected by speculation. However, due to the different system of property rights, speculation manifests itself in different ways compared with western countries. "Bu po bu li" (no demolition without new buildings), the slogan of Mao Tse Dong, has become the motto of the land speculators of today's Shanghai (Bommarius, 2005).

In Cambodia, a rollout of urban capital caused a land bubble from 2004 to 2008. For example, in Puok district (Khnat and Tuek Vil) the land price was reported to have increased from circa US\$ 1000–3000 / ha before 2004 to \$US 50 000 / ha in 2008: approximately a 25-fold increase in just five years. Many peasants sold their land and were eventually made completely landless. Unsurprisingly, the sites were mostly bought for speculative motives; many of them have been left unused and undeveloped by their new owners. This scenario also generally holds true for ELCs: According to the World Bank, only 10 percent of the areas granted by ELC are in use (World Bank, 2007). Hence, the provision of infrastructure to remote areas by Private Participation in Infrastructure (PPI) was also among the expectations.⁴

If the incremental value is lowered as a result of the site value tax, speculation and the seeking of land rent are also lowered. The incentives to lobby or to bribe local authorities due to land rent seeking – having the 'free lunch' – are also reduced. The planning process would become more neutral and the site value tax could even contribute to good governance. Having said this, if the tax is then levied too high, developers (whether private or public) will not even be able to cover their costs out of the

4 Interview with Dr Tep Makathy, GTZ consultant, Phnom Penh, October 2009.

incremental value. However, the author would argue that developers should not necessary even be required to foot the bill for infrastructure costs at all: Infrastructure is basically a public good, and providing infrastructure is a public task that should be financed out of taxes. If private investors supply the infrastructure, they should do so as an agent of the state and be compensated fairly to cover their costs. Of course, it will be very important that the rules of compensation are clear and open for the sake of transparency. In this author's view the current approach, which involves shifting risks (costs) and opportunities (participation in the incremental value) to developers – as is often the case in Germany via Private Public Partnership – is not compatible with good governance (cf. Bretschneider, 2008, who also warns against the adaption of plans to the wishes of private developers). Covering development costs via taxation removes speculative opportunities from developers (value capturing). However, they would be compensated in terms of the consequent increase in security: speculation on the incremental value should not be the economic remit of developers.

Furthermore, by introducing the proposed tax, better compliance with public plans for the land could be achieved. The tax is charged on the value of unimproved land. The value of unimproved land is calculated according to the yields that can be earned via the best possible use of the land. Hence, the tax is paid according to the best possible use. If owners use the land in an inefficient way, they bear costs that are not covered by yields. So the user of the land is currently required to earn the tax. The user must always ensure that the site is used efficiently, within the limits set forth in the guidelines of the planners. Inefficient use of plots, either for economic or for other reasons, costs money. According to an appraisal of the Bavarian State Ministry of the Environment and Public Health (2006, Germany), up to 36 percent of the potential sites in Bavarian municipalities are left underused or unused. Such inefficient use of sites and a rising pressure to develop new settlements on the edges of towns are two sides of the same coin. Regardless of the reasons why the plots are underused or unused, a site value tax would create pressure to use the sites more efficiently. Given that such a tax would not cause any tax wedge, not only land reformers but also liberal economists such as Milton Friedman have supported such a tax (Mankiw and Taylor, 2000).



Due to the costs of the tax, no investor would keep more land than they really need. Ongoing tax payments would create a pressure to offer properties on the market. Generally, such a tax would mobilize the market and would guarantee a large supply of plots. As a result, enterprises especially would feel less of a need to hoard 'reserve plots' or to bank land (cf. Evans, 2004), because this would only cost money. The market would then become more dynamic in meeting the demand for available sites. Also the 'reservation' of plots for strategic reasons (e.g. impediment of competitors) would be more difficult than it is today. And as mentioned earlier, the price of land would also decrease. This will make it easier for firms and households with weak budgets to act in line with the ideas of planners.

If the value of the land goes down due to the site value tax, access to land for low-budget households and firms will be made easier. Exceptionally, policy-makers should think about introducing tax breaks for small-scale farmers – in order to protect their incomes given their specific role in society, and to encourage a greater acceptance of the system among this group.

The effects mentioned above would make it possible to temper regulatory constraints that weaken rights based on control and use (Table 2). Nevertheless, such a tax is also a dilution of property rights. However, instead of adding to the density of regulations (as mentioned above) the dilution refers to *ius abutendi* and *usus fructus*, and not to the rights of users. Hence, this regime is in fact more compatible with liberal ideas of how a market economy should work. Furthermore, there is no negative impact on tenure security. By diluting these rights with a significant tax, the targets of planning could be achieved more effectively, compared with creating a great deal of red tape: Better plans and better compliance might be achieved using suitable financial incentives.

Given that the above scenario would require significant institutional changes, the political feasibility of such a regime should also be taken into account. The advantage of a site value tax is that the existing system of property rights (e.g. full ownership titles in Germany, or the existing leasehold system in China) need not be radically reformed. However, an argument against a site value tax is that in many threshold and developing countries, there is no operational legal cadastre and assessment regime.

The advantage of a site value tax is that the existing system of property rights need not be radically reformed

Certainly, it would be necessary to build new capacities and institutions as well as a proper land assessment process: such a tax cannot be introduced from one day to the next. Nevertheless, even in the absence of a legal cadastre, local authorities could install a fiscal cadastre in order to identify and value a plot of land; they could then post a public notice indicating that the particular piece of land in question owes a given amount of tax. If no one steps forward to pay the tax, the government could seize the land (Perkins, 2009).

Even more theoretical positive effects could be discussed. However, it is difficult to give evidence by mentioning best practice. The financial framework proposed here – a tax and financial equalization scheme – is a blueprint and has not yet been realized. Germany's property tax is currently under dispute, as it probably violates the constitution and there is common agreement that a reform is necessary. China has a leasehold system, combined with an underdeveloped tax system that is not intended to support land use policy. Discussions about setting up a land tax have begun. In Cambodia, a general property tax on land has not yet been introduced. However, in the past some interesting experiments have taken place that are a reasonable match for the proposal in this paper, and can therefore be studied. Dieterich (2004) describes the positive experience of Denmark with a tax on the value of unimproved land (before the tax freeze in 2001; cf. Dieterich, 2004 and Erlandsen *et al.*, 2006). A comparable and apparently very successful approach was already used in Qingdao in 1898 (Warner, 1999). The system was set up during the colonial era by a German administration officer named Schrameier, who between 1924 and 1925 was also an advisor to Sun Yatsen. If such a system could be introduced in the 19th century, then developing and threshold countries should be able to do the same today.

Making local governments neutral actors

Another issue is how to make local governments neutral actors in land use planning and land development. If the financial resources of local governments depend heavily on funds that can be increased by land development and land conversion – via direct participation in the



incremental value, tax revenues, or money from a financial equalization scheme – then local governments cannot be expected to be neutral actors. The solution should be the same as proposed for private-sector actors: Local governments should not be direct beneficiaries of land use changes either.

In order to make local governments more neutral, the money raised by land use changes should be integrated into a financial equalization scheme. The money could be transferred to a higher administrative level and pooled there. Eventually it could be redistributed to the local governments according to the size of the local population (cf. the idea of the 'Baulandausweisungsumlage' as has been discussed in Germany; Krumm, 2002). Hence, farmland conversion would no longer provide any direct financial benefits to local governments. It is true to say that local governments would need incentives to care for the attractiveness of their local area in order to encourage greater settlement (and so receive a higher share of public revenues) and for local politicians to achieve their political ambitions. Nevertheless, local governments as a whole would neither win nor lose anything. All local governments would actually receive as much revenue as before.

The road to achieving such an arrangement is long and complex. Presently, municipalities in many countries depend heavily on the revenues arising from land use changes. In Germany, a municipality's right to collect property tax on land is fixed in the constitution – naturally, they therefore resist any changes to the tax assignment. China on the other hand has a weak and decentralized tax system; hence, local governments need the revenues of land conversion (Deng, 2003). Cambodia meanwhile is a 'blank sheet of paper' – a suitable property tax has yet to be introduced. If this proposal were to become part of the political agenda, Cambodia has the opportunity not to repeat the mistakes other countries have made.

CONCLUSION

The intention of the reform of the financial framework is better governance, via changing the allocation of the land rent. The land rent cannot and should not be abolished. It is an important allocation force that regulates the use of the land (Pfannschmidt, 1990). High land rents lead to opportunity costs, that can normally only be covered by valuable investments. The interesting question is: Who is the beneficiary? The allocation function of the land rent is based on the pressure it puts upon the user, either as payment of rents (the tenant) or opportunity costs (the owner). The allocation also works if a share of the increased land rent of developed sites and incremental value is shifted to the public purse, e.g. by a tax. Furthermore, from an allocation viewpoint there is good reason to create a suitable tax system in order to achieve a better coupling of benefits and costs. Neither the increase of land rent nor the incremental value due to land use changes should be completely private, because the land rent is determined either by coincidence or by public planning and investments (infrastructure), and rarely by uncompensated investments by private owners of sites.

However, the proposed reforms need to be made step by step. For China and Cambodia, the first step would be to lay the foundations by stressing the capacity building in valuation and introducing assessment boards and a financial cadastre. Generally, the taxation system (including income tax, corporate income tax and value added tax) needs to be strengthened. Chinese local governments especially should be allotted more money from these sources, in order to make them more independent of the revenues raised by land use changes. The next step would be the introduction of a site value tax system. From the outset, the site value tax should be integrated into the proposed tax assignment regime; if the introduction of such a financial equalization scheme were to be carried out later, communes would be obstructive to the reform of the tax assignment regime (as is the case in Germany).

Land rent is an important allocation force that regulates the use of the land



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