

36187

HOUSING AND COMMUNAL SERVICES IN THE SOUTH CAUCASUS

**Multi-Apartment Housing in Armenia
Issues Note**

March 2006

**Infrastructure Department
Europe and Central Asia Region**

TABLE OF CONTENTS

Executive summary	3
The vicious circle	5
Background	7
<i>Overview of the housing and communal services sector</i>	7
<i>Restructuring by default</i>	8
Private housing management and maintenance	11
Why don't apartment owners manage their buildings?	14
<i>Willingness and awareness</i>	14
<i>Necessity</i>	15
<i>Ability</i>	19
Conclusion: what do we do about the vicious circle?	21
Annexes	23
<i>Annex 1. Major projects and studies consulted in preparation of the note</i>	23
<i>Annex 2. Official average exchange rates</i>	24
<i>Annex 3. Summary of macro-economic information</i>	25
<i>Annex 4. Programs aimed at enhancing HOA operations in Armenia</i>	26
<i>Annex 5. Activities undertaken by international institutions under their HOA-related programs</i>	28
Bibliography	29

Executive summary

The purpose of the study is to understand how to break the vicious circle, in which housing maintenance and communal services providers* and residential customers are caught now in Armenia. Low tariffs and poor payment enforcement mean apartment owners do not pay the full costs of their housing. As a result, owners are discouraged from establishing homeowners associations (HOAs) and managing and maintaining their buildings. At the same time, without HOAs, it is hard to enforce payments for communal services, such as water, heating, garbage collection and building maintenance, since individual customers cannot be “disconnected” for non-payment.

The study analyzes why owners of privatized apartments allow the buildings they live in, and the communal services they depend on, to deteriorate given that a legal framework for ownership has been adopted, and extensive technical assistance is being provided. The study focuses on multi-family apartment buildings for two reasons. First, more than half of the population lives in these buildings and comprise the majority of communal services customers. Second, housing reform efforts have targeted apartment buildings since historically there was little state involvement in single-family dwellings. Detailed reforms in utility sector and other areas related to housing such as financial and real estate markets, environment for development of small and medium enterprises are not reviewed here and go beyond the scope of this study.

The current situation in housing and communal services sector has resulted in a cycle of mounting subsidies and arrears. As revenues fall far short of the costs of service provision, service quality continues to erode. Each year maintenance and other communal services providers deliver worse services to fewer households. The result has been a substantial, albeit unintentional, restructuring of the housing and communal services sector as the availability and quality of utilities have eroded and as apartment-owners have seen their buildings crumble. The current availability of heating, hot water and gas is less than twenty percent of what it was at the beginning of transition. At the same time, capital repairs of the multi-family stock have dropped to one-tenth of their pre-transition level.

Responsibility for perpetuating the vicious circle lies primarily with local governments. During the past twelve years, the central government has reduced its involvement in the housing and communal services sector significantly – often by transferring responsibilities to local governments. As a result local governments not only own common areas, but also provide most communal services. There are two possible explanations for why local governments participate so actively in the sector. First, provision of shelter and vital communal services are seen to be part of the social contract with the population. Second, local government involvement provides opportunities to build political support, for example, by fixing a building that is falling down. The situation in housing and communal services will continue to deteriorate as a downwards-sloping spiral until the circle is broken by changing the underlying incentive structure established by local governments.

* For the purposes of this study ‘communal services’ include building maintenance, district heating, gas and water supply and garbage collection.

The most important step in breaking the circle would mean changing the role of the local governments in the housing and communal services sector. While developing detailed reform agendas for individual municipalities requires further study, some general broad reforms can be identified. They include transferring decision making about building management to residents, commercializing housing maintenance providers and restructuring how subsidies are provided. Local governments will need to be constructively engaged if the local policy environment for private initiative in housing management is to be changed. Without this change, further reforms and the newly adopted legal framework will not be implemented effectively, the multi-family housing stock will continue to deteriorate as will access to (and the quality of) the other communal services.

While none of the required further steps are easy, the current economic situation and the Government's demonstrated commitment to reforming housing and communal services provide a good opportunity for moving forward to complete the reform agenda. The economy has been growing at an average rate of 6 percent and real income per capita has increased at an average rate of 6.9 percent since 1997. Altogether, 96 percent of housing units are privately owned and 41 percent of the multi-family stock has private HOAs. The legal framework is relatively well developed and a number of laws on utilities and private housing management have been adopted. The government is taking steps to restructure also the water and gas supply industries. Experience in more advanced transition economies has demonstrated that while restructuring the role of local governments in housing and communal services sector is difficult, requiring both time and political will, the potential benefits are large. If the incentive structure is not changed, the situation will continue to deteriorate.

The vicious circle

As a result of the local policy environment, housing and communal services providers* and residential customers are caught in a vicious circle. Low tariffs, poor payment enforcement and public subsidies mean apartment owners do not pay the full costs of their housing. As a result, apartment owners who establish a homeowners association (HOA)* to manage their building will pay more, which creates a strong disincentive to HOAs. At the same time, without HOAs, it is hard to enforce payments for communal services since individual customers cannot be “disconnected” for non-payment. This situation has resulted in a cycle of mounting subsidies and arrears. As revenues fall far short of the costs of service provision, service quality continues to erode in a situation best characterized as a “low-level equilibrium trap”:

The Armenian water utilities are caught in a low-level equilibrium trap, characterized by decreasing service quality and falling revenue. [...] Unable to cover operating expenses, the water utilities have been forced to reduce hours of service. Meanwhile revenue continues to fall as households refuse to pay their bills partly because of the decreasing service quality. [...] The challenge is for the water utilities to break out of this trap by employing strategies that generate more revenue and improve service to both the poor and non-poor.

-- Lampietti et al (2001).

The above quote refers specifically to water companies in Armenia; however, the statement applies equally to other communal services such as heating and maintenance. Although the government of Armenia has completed substantial reforms in housing and communal services, the necessary complementary reforms in the incentive structure have not been undertaken. The current situation discourages apartment owners, who pay for only a minor share of housing and communal services costs, from undertaking an active role in the management and maintenance of their buildings, which would cost them much more and would result in only marginal improvements for building maintenance and no improvement for utility services.

The situation will continue to deteriorate as a downwards-sloping spiral until the circle is broken by changing the incentive structure. As local governments play a central role in creating the conditions that result in the vicious circle, they are best placed to break it.

Thus, the purpose of this study is to understand how to break the vicious circle. The study analyzes why owners of privatized apartments allow the buildings they live in, and the communal services they depend on, to deteriorate given that a legal framework for ownership has been adopted, and extensive technical assistance is being provided.

* For the purposes of this study ‘communal services’ include building maintenance, district heating, gas and water supply and garbage collection.

* For the purposes of this study the term “homeowners associations” includes any of the three forms of a building’s governing body indicated in the Law on Apartment Building Management of 2002 – condominium, trustee manager and authorized manager, unless a municipal maintenance company serves as a trustee manager.

Recent Bank- and donor-financed activities in housing and communal services have focused primarily on utility suppliers and HOAs in multi-apartment buildings. Relatively little attention has been paid to understanding the broader framework determined by local governments, within which both apartment owners and utility suppliers operate. This study will seek to fill that gap.

This study draws on the considerable body of literature on housing and communal services in Armenia (see Annex 1), as well as country visits within the framework of the World Bank's Urban Heating Project. The study concentrates on multi-family housing, which comprises the majority (52 percent nationwide and 75 percent in urban areas) of the country's total housing stock. The multi-family stock has been most affected by the move from a centrally planned to a market economy. Single-family houses, in contrast, were privately built, owned and maintained even before 1990, thus, were not the object of housing sector reforms.

Background

Overview of the housing and communal services sector

The housing sector has been a high priority for the Government of Armenia since independence. Despite the 1988 earthquake, which destroyed about 17 percent of all housing in Armenia, the housing stock inherited from the Soviet Union was larger and better equipped than the stock in countries with similar per capita incomes in other regions. This inheritance has helped Armenia with the difficult first transition years by continuing to provide shelter to the population. At the same time, the Armenian government's decision to privatize dwellings has resulted in an unparalleled transfer of wealth in the country; as in other countries, housing is the population's major asset valued at approximately three times annual GDP [6].

At the beginning of transition, 52 percent of all housing stock was privately owned--the highest level of private ownership in the Soviet Union. This high level of private ownership reflected the prevalence of the single-family homes that were usually privately built and owned even under the Soviet system. The multi-family stock was generally built, owned and maintained by the state. The state also provided the associated communal services. As a result, government reforms have been aimed at communal services providers and housing in apartment buildings.

The central government has significantly reduced its role in the housing and communal services sector. By 1999 all household level subsidies connected with housing and communal services had been replaced with a unified family benefit system. The state's role in funding housing construction has dropped from 70 percent of new housing construction in 1990 to 32 percent in 2000 (Table 1). Despite a precipitous drop in new housing construction (in 2000 it comprised a mere 13 percent of the level in 1990), the average housing space per capita increased by 24 percent mainly due to emigration of a large number of people. However, these numbers do not fully take into account the significant depreciation of housing due to low, if any, maintenance for more than a decade.

Table 1. Housing Stock Characteristics in Armenia in 1990 and 2000

	1990	2000
Total housing stock (m²)	50,900,000	67,100,000
Privately owned housing (percent of total)	52%	96%
Urban housing (percent of total)	64%	61%
-Of which, privately owned (percent of total)	19%	57%
Annual new housing construction (m²), of which	1,459,000	194,000
Private new construction (percent of total)	28%	68%
Public new construction (percent of total)	70%	32%
Other (percent of total)	2%	N/A
Average per capita housing	14.2 m ²	17.6 m ²
In urban areas	12.9 m ²	16.0 m ²

Source: National Statistical Service of the Republic of Armenia

In the 1990s, the central government permitted apartment residents to privatize their dwellings and by 2000, 96 percent of all housing units were privately owned. The central government transferred responsibility for the buildings and land to the local governments. At the same time, the central government prepared the legal framework to permit the responsibility for buildings and land to be transferred to apartment owners through a series of laws adopted in the years following 1995, although actual reform continues to lag behind the changes to the legal framework.*

The central government has also reduced, although not eliminated, its involvement in provision of communal services. Responsibility for services such as garbage collection and housing maintenance have been transferred to the local level. District heating companies are generally locally owned, as are the water distribution networks. Heating and water tariffs are set locally.

Box 1: Local Self-Government Responsibilities

The Law of the Republic of Armenia on Local Self-Government (adopted in May, 2002) provides the general legal framework for local self-government (“community”) responsibilities in housing and communal services. According to this law:

- State-owned property needed for fulfillment of the mandatory powers of the communities shall be transferred to the communities free of charge. These include state-owned communal utilities and other communications, water supply and removal, sewage, heating and trash removal utilities located within the community, together with all their internal community networks.
- State-owned residential stock may also be the property of the community.
- Organizing and ensuring the operations of community public utilities and residential buildings (including maintenance and capital repairs, registration, distribution and accounting are mandatory responsibilities of the community.
- Communities are also responsible for managing the operation and maintenance of electricity, sewage, water supply and removal, irrigation and gas supply, heating systems and other structures of community subordination.
- Communities should organize trash collection.
- Communities are responsible for preparing and holding founding meetings of condominium associations, as well as enforcing other bodies of multi-apartment residential buildings envisaged by the legislation.
- Communities should establish fees for services they deliver.
- Communities should register residents.

Restructuring by default

Although the central government has reduced its involvement in the housing and communal services sector, the public sector’s role remains high because local governments continue to own common areas and provide most communal services. There are two possible explanations for why local governments participate so actively in this sector. First, provision of shelter and vital communal services are seen to be part of the social contract with the population. Second, local government involvement provides opportunities to build political support, for example, by fixing a building that is falling down.

* Most importantly, the 2002 Laws on Condominiums and on the Management of Multi-apartment Buildings.

Local governments continue to be responsible for common areas in apartment buildings, which they maintain through municipal maintenance providers. In some cases local governments provide maintenance directly through their housing departments, which are the direct descendant of the Soviet-era “zheks.” More commonly, the zheks have been detached from municipalities and separately incorporated as joint stock companies (Municipal Maintenance Companies or MMCs). These companies have been “privatized” by allocating 80 percent of shares to municipalities and 20 percent to employees with an option of further buy-out, thus, resulting in what many observers consider to be the least efficient form of management [12, 31].

Continued public involvement (primarily by local governments) in housing and communal services has perpetuated the vicious circle for more than a decade with profound consequences for delivery of communal services and the quality of the housing stock. Each year maintenance and other communal services providers deliver worse services to fewer households. The result has been a substantial, albeit unintentional, restructuring of the housing and communal services sector as the availability and quality of utilities have eroded and as apartment-owners have seen their buildings crumble.

Utilities. While utility prices have gradually been increased towards cost recovery levels, enforcement of utility payments, except for electricity, is very weak, resulting in extensive free-riding and low collection rates. Weak enforcement results in large part from the difficulty, and cost, of disconnecting individual customers due to the technical design of utility infrastructure or the nature of the provided services. Furthermore, utility providers legally cannot disconnect an entire building if any individual apartment resident has paid in full. As a result, enforcing payments for most services without contracting with the whole building (i.e. without signing a contract with an HOA) is very difficult.

Box 2. Importance of disconnection of services as a payment enforcement tool – the case of electricity in Armenia

Provision of electricity is very different from other utilities and communal services in Armenia. The technical design of the electricity network allows for connection and disconnection at the apartment—instead of the building—level. . From a historical perspective, during the Soviet years, electricity was the only utility that was individually metered and where bills were based on actual consumption. Despite this, collection rates during the early nineties were very low.

While residential consumers continue to account for a large proportion of debts for electricity, collection rates have improved considerably. In 2002, the collection rate reached 85 percent, far above the rates for other utilities. This was possible because non-payers were routinely disconnected. The Integrated Survey of Living Standards indicated that nearly 50 percent of urban households were disconnected for non-payment during 2002.

This is particularly important as it illustrates that disconnection played more important role in payment enforcement than individual metering.

At the beginning of transition, the overwhelming majority of urban households had round-the-clock access to gas, centralized heat and hot and cold running water. Without sufficient revenues, neither access to utility networks, nor service quality, could be maintained. As a result, the actual availability of district heating, water and gas in apartments is only a fraction of

the designed (and officially reported) connections. The following table compares officially reported access with that based on the data from 2001 Integrated Survey of Living Standards.

Table 2. Official versus Actual Availability of Services in Apartments in Urban Areas in 2000 and 2001 (percent of households)

	Service Availability 2000 (official)	Service Availability 2001 (survey)	Service Availability 2001 (survey)	
			Yerevan	Other Urban
District Heating	84%	10%	14%	7%
Hot Water	62%	< 1%	<0.5%	1.5%
Gas	82%	14%	7%	20%
Water	99%	94%	98%	90%

Source: National Statistical Service of the Republic of Armenia (2000 official data) and Integrated Survey of Living Standards (2001).

Households that continue to receive utility services experience much reduced service quality. In the case of water, only 19 percent of households in Yerevan, and 7 percent in other urban areas, report receiving water for 24 hours each day. The quality of district heating, hot water and gas is even worse.

Housing Maintenance. The vicious circle applies equally to maintenance of common areas in apartment buildings. Maintenance fees set by local governments range from 50 to as much as 95 percent below the estimated costs, as shown in the table below.

Table 3. Comparison of Actual and Required Maintenance Fees in 2003 (per m²)

Currency	Actual Fees*	Required Fees
US Dollar	0.01 – 0.03	0.07 – 0.17
AMD	6 – 17	39 – 100

Source: actual fees are as reported by HOAs at the beginning of 2003; required fees are estimated in Scott Wilson Kirkpatrick & Co. Ltd. Et al (1999).

Low collection rates further compound the problem of low maintenance fees. At the beginning of 2003, only one-quarter of households paid their maintenance fees. As a result, substantial arrears owed to the municipal maintenance have accumulated. In Yerevan, the Kentron Municipal Maintenance Company (MMC) and Arabkir MMCs reported arrears for maintenance and garbage collection that totaled from ten to twenty months worth of billings. Arrears for maintenance alone were the equivalent of 1-3 years of total monthly billings. [32; interviews with HOAs at the beginning of 2003]

As a result, virtually no capital repairs have been undertaken in recent years (see Table 4 below) and even routine maintenance is rare. Interviews with representatives from local governments

* Actual fees are charged only on the “living area” of an apartment, which excludes the kitchen, bathroom and corridor, or about 30 percent of the total area.

and Municipal Maintenance Companies found that most efforts are directed at emergency repairs performed on an as-needed basis. This work is financed by pooling the scarce fees from all buildings to cover the costs of repairs in a few buildings, which results in large cross-building subsidies that serve as a type of insurance for emergency repairs. Five years ago, the National Housing Policy Study estimated that the amount required to repair only the roofs and common hallways in multi-apartment buildings would be more than US\$ 160 million, or nearly 10 percent of GDP for that year.

As the below table shows, capital repairs have dropped by a factor of ten from 1.3 percent of the housing stock in 1994 to 0.1 percent in 2000. Although world experience varies substantially from country to country, in the Netherlands it is assessed that capital repairs should average 1-2 percent per year [6].

Table 4. Capital Repairs of Housing (as percent of total housing space)

	1994	1995	1996	1997	1998	1999	2000
Percent of all housing space undergoing capital repairs	1.3%	1.01%	0.05%	0.16%	0.03%	0.08%	0.11%

Source: National Statistical Service of the Republic of Armenia

In Armenia, the need for capital repairs is greater than in other parts of the region in part because of the earthquake, military conflicts and difficulties of the early transition years when, for example, apartment residents resorted to burning the wood from exterior doors and window frames for heat. Furthermore, most multi-family buildings are poorly built due to the low standards for construction of Soviet buildings. Perhaps the best example of the quality of design and construction is heat transmission of buildings, which is 2.5 – 7 times higher than that in economies such as Germany, Great Britain and Sweden for buildings built during the same period [23]. As many of the buildings are approaching, or have already exceeded, their expected lifespan, the issue of maintenance becomes particularly important. Approximately one-quarter of the multi-family stock was built before 1960 and about 53 percent were built from 1960-1980, which means three-quarters of units are 30-50 years old.

More than a decade of inadequate maintenance and several severe winters have exacerbated the problems with the conditions of the buildings. In the 2001 survey of living standards, about half the apartment dwellers in urban areas assessed their housing conditions as “not so good” or “bad” while fewer than ten percent believed their housing to be in “good” or “very good” condition [26]. Without investments to improve building condition and extend the assets’ life, the buildings are gradually becoming unsafe.

Private housing management and maintenance

International donors such as CIDA and USAID, as well as the JSDF and GEF through the World Bank, have developed and implemented a broad array of activities in the housing sector. These programs have been intended to raise the awareness of apartment owners about their rights to,

and responsibilities for common areas in their buildings and have been intended to establish and strengthen HOAs (Annexes 4 and 5).

One result of this assistance has been the registration of HOAs covering 41 percent of the multi-family stock (see Table 5), although the rate of registration varies greatly by region. In the Nubarashen district of Yerevan, all apartment-owners belong to a single HOA. In Ararat Marz, however, not a single HOA has been registered. About 80 percent of HOAs are found in Yerevan [6a].

Table 5. HOAs in Armenia

	1996	1998	2001
Number of registered HOAs	60	354	602
Number of buildings in HOAs	300	650	3009
Number of apartments in HOAs	1,600	42,583	170,969
Number of units in HOAs as percent of all apartments	N/A	10%	41%

Source: 1996 and 1998 data are from the Doane, Simpson and Rabenhorst, (2000); 2001 data are from Desilets and Vanoyan (2001).

However, the existence of an HOA does not necessarily mean the local government has disengaged from ownership or maintenance of these buildings nor does it mean that the HOAs are functioning. In a 2001 survey, the Scientific Research Center for City Management Systems found that about 15 percent of surveyed HOAs consider themselves to be completely inactive, while 20 percent describe themselves to be active (holding meetings, collecting dues, providing services). The remainder fall somewhere in between. [5]

Despite significant technical assistance to HOAs, surveys indicate that the majority relies on the buildings' residents or municipal maintenance providers to carry out maintenance. The results of the above survey showed that only about 20 percent of the active HOAs have contracted professional managers and only 10 percent have contracted private companies even for building repairs. [5] Development of private providers of housing management and maintenance services is very slow and is mainly focused on the few high-income luxury apartment buildings.

What do HOAs charge and what do they do? HOAs often feel constrained to set fees no higher than those set by local governments for municipal maintenance providers. As a result, HOA fees are less than those that are required for adequate maintenance. In 1998, dues averaged US\$ 0.02 – 0.04 per month per m² in Yerevan and Sevan, which was still far below the costs of maintenance, US\$ 0.07 – 0.17 / m². (32 and interviews with HOA heads in 2003) Estimates of the average collection rate for HOAs vary widely, from 15 – 80 percent.*

* 15 – 20% by Desilets and Vanoyan (2001), 70% by Scott Wilson Kirkpatrick & Co. Ltd, Hai Nakhagits / Armproject GHK International (1999) and 50% by Parvanyan and Pasoyan (2002) and 40 – 80% by Parvanyan, Pasoyan and Ter-Grigoryan (2002).

In an environment where a large percentage of apartment owners are poor, HOAs are additionally burdened by the need to protect the poorest residents. HOAs frequently discount dues for low-income families or allow substitution of labor for dues. One survey found that on average HOAs exempt 10 percent of residents from dues due to their low income. [27]

Given the circumstances, it is not surprising that HOAs provide only few services. Between 60 and 70 percent of active HOAs arrange for garbage removal and cleaning of common areas (see Table 6 below). Only a quarter maintain or repair common areas. Apartment owners belonging to active HOAs report varying degrees of satisfaction. A survey of 1,200 apartment owners in Achapniak District in Yerevan indicated that 57 percent were satisfied with HOA operations in their buildings and 60 percent were satisfied with regular maintenance. A significant share of respondents, however, indicated dissatisfaction with repairs (both minor and capital) and about 45 percent were willing to pay more for such purposes [36].

Table 6. Services Provided by Active HOAs

Service	Percent of Active HOAs providing the service
Garbage management or payments	70%
Cleaning of common areas	62%
Water supply maintenance or payments	41%
Heating system payments or maintenance	25%
Common areas repair or maintenance	24%
Elevator maintenance or payments	20%
Self-policing of illegal electricity use	11%

Source: Environmental Resource Management (2001).

In addition to the services HOAs provide, they also may contract directly with other service providers such as garbage collection and servicing of elevators and assume responsibility for collection of the service fees. Several HOAs have been able to negotiate significantly lower fees for such services. For example, in the case of garbage collection the estimated savings were 40 percent.

Few HOAs contract directly with utilities for services such as water and heating. This is starting to change as utility providers recognize the potential benefits from contracting with HOAs instead of individual apartment owners. Contracting with HOAs results in lower transaction costs for the utility and higher collection rates – i.e., 40-60 percent instead of the water utility's 30 percent. [5, 37] In many instances an incentive mechanism is included in the contract between the water company and the HOA so that the HOA receives an administrative fee.*

* A fixed fee of AMD 14 is paid to HOAs for every cubic meter for which the payment has been collected. AMD 20 for every cubic meter is transferred to the Yerevan Water Supply Company and the balance of AMD 28 (tariff is AMD 56) is put in an unallocated fund for internal plumbing repairs of the building. The minimum required collection rate for HOAs is 55%. (Yerevan Water Supply Company, April 2003.)

Why don't apartment owners manage their buildings?

To understand what impediments exist to resolving the problem of management of building common areas, one needs to answer four questions. First, are people willing to act collectively? Second, are people aware of their possibilities and options? Third, is there a necessity for apartment owners to establish an HOA and undertake the maintenance of their property? Finally, are people actually able to establish and operate an HOA, or is this difficult in practice?

As will be seen below, although willingness and awareness are essential, the incentive structure (necessity) and enabling environment (ability) are much more important both for establishing and for operating HOAs. In most places, local governments have had little success in establishing either the incentives or the enabling environment that would result in apartment owners opting to take an active role in the management of their building.

Willingness and awareness

In part due to their Soviet legacy, apartment owners are skeptical about the value of collective action. Willingness to establish an HOA (or even participate in decision making) is very low. In a survey of residents' attitudes towards heating services, respondents thought that:

- Collective action would not be useful since it would lead to a situation where no one would be responsible; and
- Heating is the responsibility of the government (not apartment owners) – lack of activity from apartment owners will ensure that the government will continue to provide this service. [10]

While these opinions were expressed about heating, they are applicable to other types of services as well. In the case of building maintenance, the apartment owners' confusion about responsibility is even more understandable since most common areas (including those in HOAs) are still registered as the property of the local governments. The Law on Management of Multi-Apartment Buildings has been adopted in large part to counter the idea that the government is responsible for managing and maintaining common areas.

As a result of extensive public information campaigns and the many programs to promote creation and strengthening of HOAs carried out by international and local organizations, one would expect apartment owners to be well aware of their rights and responsibilities as well as how to establish and operate HOAs (for a summary of programs, see Annexes 4 and 5). Unfortunately, no information is available to evaluate the effectiveness of these efforts and some surveys of residents indicate contradictory results.

A survey by the Scientific Research Center for City Management Systems in 2001 indicated that many residents learned that they belonged to an HOAs only after it had been registered [5]. The results of the 2000 survey of residents in buildings in Yerevan where HOAs had been established indicated that awareness about the management of buildings was very high. From 85 to 87 percent of respondents were aware that an HOA existed in their building and could identify the chairman. Respondents' awareness of other aspects of HOA operations, including how decisions

are made and what has been decided, was considerably lower and was highly correlated with attendance of HOA meetings by apartment owners. [36]

Necessity

In most places, one would expect apartment owners to maintain their buildings for two reasons – to preserve (or increase) the value of their housing asset; and to reduce operating costs (usually for utilities such as heat and water). However, in Armenia where nearly half of apartment residents were poor in 2001 and where the real estate market is undeveloped, one would expect households to prioritize current consumption over long-run preservation of housing value. A study of discount rates in nearby Ukraine and Bulgaria, found just that. In 1996, in Ukraine, the median two-year discount rate reached 206 percent while longer-term investments were ruled out entirely. In 1995, in Bulgaria, the two-year discount rate reached 45 percent and the five-year rate reached 38 percent, while longer-term investments were rejected entirely. [28] When discount rates are high, investments with long payoff periods will be ignored in favor of current consumption.

Although an equivalent analysis has not been carried out for Armenia, one would expect discount rates to be similarly high. If so, the only feasible investments would be those leading to short-term returns, such as emergency repairs and energy saving measures. This is particularly true in the environment of nascent real estate and financial markets as is the case in Armenia. Experience in other transition economies shows that insulating buildings and installing improved heating infrastructure results in energy savings of 20 – 80 percent, yet few buildings in Armenia have opted to make these kinds of investments. The failure to make investments to reduce waste and improve efficiency may result in supply facilities that are too large because investments to improve supply do not take into consideration likely future reductions in demand.

As long as enforcement of maintenance and utility payments is weak and the state continues to provide large subsidies to communal services providers and buildings, residents are actually penalized for establishing an HOA and undertaking the responsibility for the maintenance of their building.

Policy Environment Established by a Local Government. Municipal maintenance providers carry out (albeit limited) maintenance and repairs regardless of whether apartment owners have paid the maintenance fees. As a result, apartment owners have no reason to take on maintenance and repair responsibilities, which currently are provided to apartment owners for free, or for nominal fees that are far below the estimated actual costs.

Although in Yerevan, municipal maintenance providers report collection rates of 60-80 percent for all payments for maintenance, waste removal and garage rent due to them, these rates primarily reflect payments for waste removal and garage rent. The collection rate for maintenance fees alone is estimated at only 25 percent, which has resulted in the accumulation of arrears equal to several years' worth of billing. While, in some cases, for example Vanadzor, local governments provide subsidies to MMCs to cover the large deficits, in most cases non-payments result in further building deterioration because of under-maintenance. [35]

Local governments not only subsidize maintenance costs, but also pay for larger emergency repairs and/or capital investments such as renovation / replacement of roofs and elevators. Either the local government's communal department or the local MMC usually carries out these repairs. A survey of local governments in ten of the twelve districts in Yerevan found that private companies carried out the majority of repairs in only three. In the remaining seven districts, the majority of repairs was financed and carried out by housing management departments or MMCs. [21] These repairs are carried out based on "needs assessments" by a commission consisting of representatives from the MMCs and city architects without additional charges or any regard of fee payments made by the building's residents. While very little information is available on the extent of such subsidies, financing capital repairs can be quite expensive. In one district in Yerevan, AMD 82 million (US\$ 145,000) or 7 percent of the total district's budget was allocated for housing repairs in 2003.

This structure of maintenance and subsidies, in effect, provides insurance to apartment owners against risks associated with their housing, including those related to lack of maintenance. Equivalent private sector insurance is not available in Armenia or even in developed market economies. Municipal maintenance providers are able to provide such insurance by cross subsidizing from one building to another and because of transfers from local government budgets. As the condition of the buildings continues to deteriorate, larger and more frequent investments will be needed, which will increase financial pressure on local budgets. As a result, the current situation merely postpones rather than solves the issue of building maintenance.

Utilities. Similarly, few households pay for utility services such as water and central heating. The majority of utility customers consist of residential users living in multi-family apartment buildings, which makes the organization of the multi-apartment stock particularly important. At present, service providers generally bill households based on norms rather than actual consumption. Thus, to reduce expenditures households have two possibilities. One is to install metering systems and invest in infrastructure to reduce water leakages and energy transmission of buildings. This option requires collective action and investments involving high transaction and financial costs. Another option is not to pay, which has no costs, requires no action and likely has no consequences beyond continued deterioration of the building and its infrastructure. Thus, non-payment is the least cost option for households to manage their expenditures and there is no incentive to establish an HOA.

Unlike electricity, water, heating and gas traditionally have not been metered and individual connection/disconnection is difficult. Although the government has made progress in reforming water, heating and gas by increasing tariffs, gradual commercialization of operations (including a private operator for Yerevan WWC) and development of the regulatory framework, the collection rates remain below 30 percent* and quality of services continues to be low.

The much higher collection rates of 85 percent for electricity largely result from a high level of metering and the ease of disconnection and reconnection at the household level. The other utilities and communal services are not so easily disconnected and reconnected. In the case of garbage collection and cleaning common areas, the nature of the service provided makes it difficult to limit access at the household level. Access to water, heating and gas can be regulated

* Collection rates are 20% for heating and 30% for water / sewage. [8, 37, 18]

only at the building level. In the case of water and district heating, the technical design of the networks make regulating access at the household level impossible without substantial and costly modification that may not be affordable to most households (for more discussion see [9] and [11]). Metering of water, central heating and gas alone is estimated to cost more than US\$ 150 per household or nearly four times the average monthly salary.** Installation of a building level heat meter would add another US\$ 150 per household. [3] In addition, meters need to be recalibrated every 3-5 years at additional cost. Reconfiguring the internal utility networks to permit disconnection of individual apartments would further increase the cost.***

In all cases, service providers who attempt to enforce payments by disconnection must cut the service to the whole building. If the service provider has contracted with the building as a whole, then disconnecting the building is legally permitted; however, if the service provider has contracted with individuals, disconnecting the whole building, if any individual apartment owner has paid in full, is illegal.

In recognition of this, the Yerevan Water Supply Company launched a broad initiative to significantly expand its contracting with HOAs in May 2002. As of April 2003, 76 such contracts have been signed and the number is expected to grow rapidly in the future. The Yerevan water company believes that the benefits of contracting directly with HOAs more than compensate for the sizeable 25 percent fee paid to HOAs for collection services. The water company's efforts are being supported by the Bank through Municipal Development Project and a large JSDF grant.

It is important to keep in mind that even buildings with excellent payment records will not benefit from improved service. Technically, service providers cannot improve service for isolated buildings and improving service for the entire network would require improving cost recovery system-wide.

Government subsidies, accumulation of debts to suppliers by service providers and deterioration of assets offset the low rates of cost recovery. Subsidies for heating companies alone are estimated to account for up to 1 percent of GDP even though only 12 percent of households still receive district heat. [7] Additional subsidies are provided to utilities and communal services providers at the sub-national level. For example, the city of Kapan subsidizes 80 percent of the costs of garbage collection. In the Arabkir district of Yerevan, local officials estimate that as much as half of the budget is used to subsidize communal services providers.

At the same time the accumulated residential debts to Armenia's two water companies (Yerevan WWC and ArmWWC) totaled AMD 33.6 billion (US\$ 60.5 million) at the end of 2001, which was almost five times the amount of government subsidies paid to the water utilities during 1998 – 2001 (US\$ 12.4 million) and more than twice the amount water companies owed to the power sector (AMD 14 billion or US\$ 25.2 million). [18] Water sector debts accounted for about 20 percent of all debts to the power sector in 2001, which at the end of 2002 had reached US\$ 220 million or 10 percent of GDP. [40] Residential heating debts (of those actually receiving the

** The average monthly salary in 2002 was US\$ 43 (National Statistics Service of the Republic of Armenia).

*** Even in developed market economies such as Finland, France and Sweden the majority of housing has only building level metering and billing. [19]

service) to the power generating companies accounted for another AMD 453 million (US\$ 0.8 million). [18]

As long as communal services remain highly subsidized and payment enforcement continues to be weak, non-payment remains the least cost option for apartment owners to reduce their expenditures. In this kind of environment, apartment owners who establish an HOA are penalized in two ways. First, they no longer receive the subsidies provided to municipally managed buildings. Second, the utilities will be better able to enforce payment, but will not be able to improve service delivery

Ability

Not only do apartment owners have few incentives to take responsibility for building management and maintenance by establishing an HOA, but, if they choose to take this on, they will find it difficult both to establish and operating the HOA. The difficulties primarily result from the policy environment established by local governments.

One problem results from how maintenance was organized in the Soviet Union, where municipal housing departments (“zhmaks”) were responsible for maintaining all buildings. After apartment privatization began, municipally provided maintenance remained the “default” option. Individual apartment owners cannot opt out of municipally provided maintenance unless they convinced the building to establish an HOA and contract an alternative service provider. As a result, individual households have little negotiating power and little ability to change how maintenance is provided.

In addition, establishing and operating an HOA is time consuming for residents, especially in buildings with large numbers of apartments. The newly adopted Law on the Management of Multi-apartment Buildings requires a high level of involvement by apartment owners in decision-making. From 50 – 100 percent of apartment owners must agree in order to make a broad variety of decisions according to the new law. Such fragmenting of decision-making among a large number of apartment owners in multi-family buildings makes property management less efficient. [2,13] In Armenia (as is the case in other transition and market economies), few residents actively participate in HOAs or in HOA meetings.* Lowering the thresholds for decision making and permitting more decision to be delegated to HOA managements would be necessary to improve management efficiency.**

The Law on Multi-apartment Building Management attempts to encourage private initiative by requiring all buildings to establish a governing body within a specified period of time. This attempt, however, has been undermined by setting an unrealistic deadline of six months (i.e. December 2002) for establishment of governing bodies. The law provides that the local government will be responsible for maintenance of common areas, if residents have failed to establish an HOA within such period, which serves to preserve the status quo.

However, formal establishment of an HOA through registration does not mean the HOA will actively function. One of the major reasons is that the current extensive involvement of local governments in provision of maintenance and other communal services essentially crowds out activity by others.

Private sector providers of maintenance cannot compete with municipal providers. First, municipal providers are the default option for housing maintenance and changing to another maintenance provider is not easy. Municipal providers also benefit from a large base of

* A survey of 1,200 apartment owners in buildings with HOAs by Woodgreen Centre (2000) showed that 46 percent of respondents had never attended an HOA meeting in their building.

** In advanced transition economies and most developed countries, building managers have more latitude to make decisions. Only a few especially significant issues are decided by apartment owners. The minimum threshold for decision making in these countries is much lower – 51 percent of quorum, which usually is set at 20 – 50 percent of apartment owners. In Armenia the minimum threshold is set as 50 – 100 percent of all apartment owners.

established customers, which allows economies of scale and permits cross-subsidies from one building to another and from one resident to another. Maintenance fees charged by municipal providers are set below cost and shortages are compensated by under-maintenance of buildings and local government subsidies. Thus, private service providers can not compete at these fee levels. Finally, municipal providers may use their resources to establish and run a given HOA. An audit of HOAs in Vanadzor revealed that in four out of the seven HOAs that were reviewed, the chairman of the HOA was also the head of a MMC. Clearly, private maintenance providers would never be able to win the business of these HOAs.

In some places, the local government has made the first step by withdrawing from building maintenance entirely and handing responsibility over to HOAs. Nevertheless, this does not necessarily mean that HOAs are active and operate efficiently. This is best illustrated by comparing HOAs in two cities: Kapan (Armenia) and Ungeni (Moldova). Local governments in both cities eliminated MMCs and passed all responsibility for building maintenance to HOAs in 1998 (Kapan) and 2000 (Ungeni) respectively. World Bank project teams visited Ungeni in November 2002 and Kapan in February 2003 and interviewed city officials, residents and HOA representatives to assess the situation.

The two cities are similar in terms of size (about 40,000 inhabitants), their high level of poverty and lack of heating. The cities differ, however, in how the local governments see their respective roles. In Ungeni, after only three years of operation HOAs are very dynamic and actively undertake minor works and repairs such as cleaning of buildings and yards, renovating playgrounds, painting staircases, collecting solid waste, etc. The municipality no longer provides any services except for water. The HOAs contract directly with the water company and private service providers for garbage collection, larger repairs, etc. and handle collections from the residents. In one case, one of the larger HOAs provides garbage collection services to other HOAs and private businesses and also has developed a business plan for rehabilitation / reconstruction of an old boiler house and provision of heating services to their buildings. The HOAs are active precisely because of the complete municipal disengagement.

The situation in Kapan is very different. The municipality remains actively involved in provision of services, which undermines incentives for residents to become more active. Representatives of the local government see the role of HOAs merely as providers of useful information on the condition of buildings and needs for repairs. During discussions it was determined that the city has retained provision of all other services such as garbage collection and water/sewage, which it provides on a highly subsidized basis (subsidies for garbage collection alone total 80 – 90 percent of costs) and prevent private providers from entering the market. Instead of contracting with the HOAs, the municipal service providers bill and collect from individual apartment owners, thus bypassing the HOAs entirely. As a result, there are few areas where HOAs *can* be involved. Not surprisingly, few residents are willing to pay for the limited services provided by HOAs and collection rates for dues are quite low.

Conclusion: what do we do about the vicious circle?

The vicious circle describes the relationship between service providers and service consumers as mediated by the local policy environment. The donors and the World Bank have been involved in both the supply and demand side through TA programs aimed at apartment owners and HOAs, and utility projects in water and heating.

The donor community has done much less to address the problems inherent in the current local government policy environment, which establishes the framework for service providers and residential consumers. Local government policies are at the center of the relationships between apartment owners and service providers – both utility and housing maintenance enterprises. Municipalities hold title to building common areas and own the maintenance and other communal services providers. The local governments determine the terms of transactions, particularly regarding registration of title for common areas, housing maintenance and utility tariffs and subsidies.

The current policies of local governments in Armenia have resulted in strong disincentives to apartment owners to establish HOAs and undertake the responsibility for their buildings because significant housing and utility subsidies mean residents are not faced with the full costs. This situation serves to crowd out other potential providers of housing maintenance and utility services. Instead, households choose the least cost option and do nothing, which is a rational response in the current environment.

However, it would require strong efforts by local and central governments to change the incentive structure and to create an environment conducive to establishment of well functioning communal service providers and HOAs, which would manage and maintain their buildings and contract for services. Some of the steps in this process are passing over the decision making on the management of buildings to their residents and commercialization of municipal service providers by establishing contractual relationships with building owners, enforcing budgetary discipline and providing services based on payments made and changing how subsidies are provided so that they encourage rather than crowd out private activity in the housing management and communal services. The existing system of implicit and explicit subsidies for housing maintenance and communal services undermine the necessity for any change, while the extensive involvement of local governments in provision of these services limits the ability of apartment owners to opt for any change.

Another important factor in the development of private initiative is the extent to which the current legal and policy environment is conducive of the development of small and medium enterprises that would be able to effectively respond to the potential demand for housing maintenance and/or management

However, due to the fact that the level of reforms varies greatly among locations and types of services, development of specific reform agendas for individual municipalities require further analysis to learn more about how public maintenance enterprises are funded, how their resources are used and what fees are collected from apartment owners. This is crucial to understand how to provide incentives and motivate local governments to change their role governments in the

housing and communal services sector. On the one hand, local governments see the continued provision of maintenance and other communal services as part of their “social contract” with the population to provide shelter and basic services. On the other hand, local governments’ control of maintenance and other communal services providers has political benefits. Local governments will need to be constructively engaged if the local policy environment for private initiative in housing management is to be changed. Without this change, further reforms and the newly adopted legal framework will not be implemented effectively, the multi-family housing stock will continue to deteriorate as will access to (and the quality of) the other communal services.

In this process of further reforms, special attention should be paid to mitigating the effects of reform on low-income households. Implementation of these reforms should mean long-term improvements in the living conditions of multi-apartment building residents and reductions in utility consumption in the long run. However, in the short-term these changes will put additional financial pressures on families that HOAs will have a limited capacity to absorb.

None of these steps are easy and implementing them will require strong government commitment. However, the potential benefits are significant – diminished deterioration of the country’s major fixed asset – housing; improved financial position (and consequently the sustainability) of service providers; and reduced need for state subsidies. In the Baltic countries, housing and communal services reform programs have resulted in improved service quality and reduced public subsidies. In Riga, for example, municipal subsidies to cover residential heating debts of more than USD \$8 million were eliminated in less than four years. This has provided increased incentives for apartment owners to undertake the responsibility for the management of their buildings and many HOAs have even obtained loans from commercial banks to pay for high return investments in building common areas.* While municipal maintenance companies continue to operate in all three countries, they have become more responsive to demand and more competitive with private maintenance providers. This has happened most successfully when local governments changed how they saw their role and distanced themselves from the management of buildings.

The status of the sector and the current macroeconomic environment in Armenia provides a good basis and good opportunity for undertaking further reforms. 96 percent of housing units are privately owned and HOAs exist formally in 41 percent of the multi-family stock. The economy has been growing at an average rate of 6 percent since 1997. Incomes are also increasing and average growth in real per capita income during the same period has been 6.9 percent. The government has recently launched restructuring programs in the water and gas supply industries and has adopted new and improved laws on housing management. When combined with the Government’s demonstrated commitment to reform generally, and to housing and communal services reform specifically, this gives a good basis for moving forward with the next steps.

* In Estonia 50 percent of multi-apartment buildings composing more than 75 percent of the total country’s housing stock are managed by active HOAs and at the end of 2002 there were around 80 loans issued by commercial banks to HOAs. In Latvia 46 such loans have been issued by early 2003.

Annexes

Annex 1. Major projects and studies consulted in preparation of the note

The following World Bank projects have been especially helpful:

- (1) Municipal Development Project (water);
- (2) Municipal Water and Sanitation Project including JSDF grant (Community Based Urban Water Supply Management Project);
- (3) Urban Heating Project; and
- (4) Utilities Project.

Major utility studies consulted include:

- (1) Heating – Lampietti, Kolb, Gulyani, Avenesyan (2001), Lampietti and Meyer (2002), Environmental Resource Management (2001), COWI and Ramboll (2002);
- (2) Water – “JEN” Financial, Engineering and Management Consulting, Ltd. (2003), World Bank (2002);
- (3) Gas – Energy and Infrastructure Department (2002^a), Yerevan Project and “JEN” Financial, Engineering and Management Consulting, Ltd. (2002). Recent Bank and donor activities include: CIDA (Homeowners’ Association and Housing Maintenance Project (Woodgreen Community Centre)); USAID (Local Government Program and Armenia Earthquake Zone Recovery Program, including Urban Housing Improvement Grant Program); World Bank (Municipal Development Project, JSDF grant Community Based Urban Water Supply Management Project, Urban Heating Project and studies by Desilets and Vanoyan (2001, 2003))

Annex 2. Official average exchange rates

	1995	1996	1997	1998	1999	2000	2001	2002
AMD per US\$	406	414	491	505	535	540	556	566

Source: SIMA

Annex 3. Summary of macro-economic information

GDP per capita (2002; current US\$)	580
Average GDP growth 1998 – 2002	6.4%
Average annual salary (2002, current US\$) ^a	517
Average inflation 1998 – 2002	2.7%
Private share of GDP ^b	60%
Corruption Perception Index (2000) ^c	2.5

Source: SIMA

^a National Statistical Service of the Republic of Armenia

^b Nations in Transition 2001 by Freedom House

^c Transparency International, 2000 Corruption Perception Index.

Annex 4. Programs aimed at enhancing HOA operations in Armenia

(as of February 2003)

Abbreviations:

UI – Urban Institute

NACO – National Association of Condominium Owners

ASE – Alliance to Save Energy

AEAI – Advanced Engineering Associates International

PIU – Project Implementation Unit

Institution	Project name	Project type	Allocated funds (USD)	Implementing agency	Actual / expected implementation period
CIDA	Homeowners' Association and Housing Maintenance Project	TA, grants	N/A	Woodgreen Community Centre	Finished
Eurasia Foundation	Grant program	N/A	N/A	Association of Condominium Owners; Yerevan org.; Gyumri Community Center	March 2002 – present
Local governments	Emergency repairs and subsidized housing maintenance and communal services	Subsidies		Local governments	Continuous
UNDP / GEF	Improving Energy Efficiency of Municipal Heat and Hot Water Supply	TA, grants	2.95 million	UNDP-Armenia, UNDP-GEF Regional Coordinator	4 year project; board date – May 2003
USAID	Local Government Program	TA	N/A	UI / NACO / ASE	Ending in 2005
	Earthquake Recovery Program	TA, grants	31 million (HOA grants – 0.125 million)	UI / NACO / ASE	2001 – 2004

	Energy Efficiency and Renewable Energy Program	TA	1.8 million	AEA / ASE	N/A
	N/A	N/A		Jenishan Foundation	Started in 1993
WB	Urban Heating Project	TA, loans	10 million	PIU	2003 – 2009
	Urban Water Supply Management Project (JSDF grant)	TA, grants	1.9 million	PIU	Launched in 2003
	Municipal Development Project	Grants	0.4 million	PIU	
Save the Children	Condominium Works with Resident Participation	N/A	N/A	Save the Children/individual condominiums	N/A
UN Work for Food	Condominium Works with Resident Participation	Food	N/A	UN Work for Food/individual condominiums	

Annex 5. Activities undertaken by international institutions under their HOA-related programs

Activity	WB	USAID	UNDP / GEF	CIDA	Eurasia Foundation	Local / central governments
Legal assistance	X	X	X			
HOA surveys		X		X		
Advice / training to HOAs	X	X	X	X		
Awareness raising	X	X	X	X		
HOA establishment		X				X
Development of commercial service providers (TA)	X		X			
Free resources (grants / subsidies)	X	X	X	X	X	X
Repayable resources (loans to HOAs and commercial service providers)	X					

Bibliography

1. Anlian, Steven J., “USAID Supports Government of Armenia’s Earthquake Zone Recovery Program. Builds on World Bank Housing Strategy”, *Recovery Channel*, Spring 2002; the Urban Institute
2. Buchanan, James M., Yong J. Yoon, 2000, Symmetric tragedies: Commons and Anticommons; *Journal of Law and Economics*, vol. XLIII
3. COWI in collaboration with Ramboll; 2002; Outline of Urban Heating Strategy for Republic of Armenia; The World Bank
4. COWI in association with Blezurs Consultants Ltd., 2002; Energy Efficiency and Housing Studies Component. Final Report – Task 1 Breakdown of the Latvian Housing Stock, Energy Saving Potential and Investment Calculation
5. Desilets, Brien and Mais Vanoyan; 2001; Condominium Development in Armenia. An Introduction; World Bank
6. Desilet, Brien and Mais Vanoyan. 2003. Condominium Association Development in Armenia: Local Governments, Central Government and Donors. The Urban Institute.
- 6a. Doane, John, Malcolm Simpson and Carol Rabenhorst. 2000. Baseline Study for Armenia Local Government Program. The Urban Institute.
7. ECORYS-Kolpron, 2003; National Housing Strategy Lithuania: Goals Attainment Study; Rotterdam.
8. Energy and Infrastructure Department, 2002^a, Description of the Existing Gas Networks in Armenia; Europe and Central Asia Region, World Bank
9. Energy and Infrastructure Department; 2002^b; Republic of Armenia Urban Heating Strategy. Summary Report and Recommendations; Europe and Central Asia Region, the World Bank
10. Energy Sector Management Assistance Program (ESMAP, a joint UNDP / World Bank Program), 2000, Increasing the Efficiency of Heating Systems in Central and Eastern Europe and the Former Soviet Union; World Bank, Washington D.C.
11. Environmental Resource Management; 2001; Urban Heating Strategy for Armenia: Demand Analysis; Tacis / World Bank Joint Environmental Program.
12. Freedom House, 2001, Nations in Transit 2001; Freedom House

13. Havrylyshyn, Oleh and Donal McGettigan; 1999; Privatization in Transition Countries. Lessons of the First decade; IMF Economic Issues No. 18
14. Heller, Michael A.; 1998; The Tragedies of the Anti-commons: Property in the Transition From Marz to Markets; Harvard Law Review vol. III
15. Human Development Unit, Country Department III, Europe and Central Asia Region, World Bank; 1999; Improving Social Assistance in Armenia; World Bank.
16. Human Development Sector Unit, Europe and Central Asia Region, 2002, Armenia – Poverty Update, World Bank.
17. Infrastructure Sector, World Bank, December 1997, “Housing Issues Paper: Preliminary Findings”, *Armenia Earthquake Reconstruction Project ICR*
18. International Monetary Fund, 2002, Republic of Armenia: Statistical Annex in “*Republic of Armenia Country Report*”, International Monetary Fund Publication Services, Washington D.C.
19. “JEN” Financial, Engineering and Management Consulting, Ltd.; 2003; Integrated Financial Rehabilitation Program for Public Utilities; for the World Bank Utilities Project.
20. JP Building Engineers, Center for Energy Efficiency in Buildings in collaboration with the World Bank and the Ministry of Construction of the People’s Republic of China, 2002, Heat Metering and Billing: Technical Options, Policies and Regulations. Chinese Demonstration Projects and International Experience.
21. Khachadurian, Aram, Spring 2002, “ Planning for Redevelopment”, *Recovery Channel*, the Urban Institute.
22. Khachatryan, Kamo, Samvel Hakobyan, Gagik Khachatrian and Gevorg Malkhasian; 2003; Local Government Compliance with the Law on Apartment Building Management; Urban Institute/USAID, Washington, DC.
23. Lampiatti, Julian A, Anthony A. Kolb, Sumila Gulyani and Vahram Avenesian; 2001; Utility Pricing and the Poor. Lessons from Armenia; World Bank Technical Paper No. 497; World Bank, Washington D.C.
24. Lampiatti, Julian A. and Anke Meyer; 2002; Coping with the Cold. Heating Strategies for ECA’s Urban Poor; World Bank
25. Lori Marz, 2003, Lights and Shades of Condominiums (article on the audit of condominiums by Lori Marz).

26. Ministry of Urban Development of Armenia; 1999; Housing Policy Study (Strategy Variations and Priority Problems), Yerevan.
27. National Statistics Bureau of the Republic of Armenia. 2001. Integrated Living Standards Survey. National Statistics Bureau, Republic of Armenia.
28. Parvanyan, Tigran and Astghine Pasoyan, 2002; Present Situation of Energy Saving in Armenian Condominiums and Their Requirements; ASE / MUNEE Armenia
29. Parvanyan, Tigran, Astghine Pasoyan and Ruben Ter-Grigoryan, 2002, Analysis of Municipal and Residential Energy Efficiency: Report on Local Barriers to Energy Efficiency Investments and Status of Energy Efficiency in Armenian Cities; ASE / MUNEE Armenia
30. Poulos, Christine and Dale Whittington. 2000. "Time Preference for Life-Saving Programs: Evidence from Six Less Developed Countries.", *Environmental Science and Technology*, April 15, 2000, Volume 34, Issue 8.
31. Satterthwaite, David (September 2001). Rural and Urban Poverty: Understanding the Differences. *Economic Perspectives*. Retrieved May 2, 2003, from <http://usinfo.state.gov/journals/ites/0901/ijee/satterthwaite.htm>.
32. Scott Wilson Kirkpatrick & Co. Ltd in association with Hai Nakhagits / Armproject GHK International; 1999; National Housing Policy Study; for the World Bank Armenia Municipal Development Project.
33. Sarukhanian, Petros; 2002; Davitashen. 24 hours water supply is a reality;" *Republic of Armenia*" November 20, 2002
34. Urban Heating Strategy (July 28, 2002).
35. Urban Institute (Washington DC) in association with the Center for Policy Analysis at the American University of Armenia and Institute for Urban Economics (Moscow); 1998; A new Housing Strategy for the Earthquake Zone; prepared for the World Bank Armenia Municipal Development Project.
36. Tatian, Peter A.; 2002; Framework for Housing Policy in the Armenia Earthquake Zone; prepared for USAID Armenia Earthquake Zone Recovery Program; Urban Institute
37. Woodgreen Community Centre, 2000, Residents Views on Condominium Association Issues, Homeowners' Association and Housing Maintenance Project in Armenia funded by CIDA.
38. World Bank, 2002^a, Municipal Water and Wastewater Project PID, May 8, 2002

39. World Bank; 2002^b; Review of Water / Irrigation and Urban Transport Components for World Bank Utilities Project
40. World Bank, 2002^c, Community Based Urban Water Supply Management Project Grant Proposal
41. World Bank, 2003; Aide Memoire of IDA Energy Sector Mission of February 3 – 12, 2003
42. Yerevan Project in collaboration with “JEN” Financial, Engineering and Management Consulting, Ltd.; 2002; Identification of Priority Investments in Gas Sector in Compliance with Urban Heating Strategy of the Republic of Armenia; the World Bank.