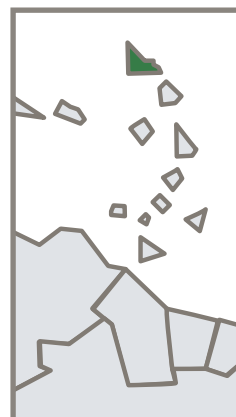


REGIONAL EVALUATION MUNICIPAL SOLID WASTE MANAGEMENT SERVICES



COUNTRY ANALYTICAL REPORT ANGUILLA / EVALUATION 2002

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1. EXECUTIVE SUMMARY

Anguilla is a small dependent territory under the UK Foreign Colonies Office. Control of all internal affairs, including solid waste management, is vested in the National Government, a popularly elected body. The solid waste management system falls under the responsibility of the Primary Health Care Department of the Ministry of Health. Direct control of the system is exercised by the Environmental Health Unit.

Anguilla's population as of the 2001 census was 11,561. In addition there is the equivalent of 1,100 permanent residents added by the transient tourist population. The local population is increasing at the rate of 3.2% per year.

The island does not attract a substantial number of expatriate workers from the other islands of the Caribbean.

Anguilla is developing a sophisticated telecommunications system, including major offices of Cable and Wireless and an online company registration system.

Anguilla has a fairly low solid waste generation rate of 1.218 kg/person/day. The low generation rate may reflect the moderately low transient (tourist) population of slightly more than 10% of the permanent population. It is thought that the transient (tourist) populations may contribute disproportionately to the solid waste generated in any country. The BVI, by comparison, has a per capita waste generation rate more than twice as high with a transient population in excess of 38% of the permanent population.

A country poverty assessment carried out recently indicates that 18% of households are considered to be "poor" and 2% are considered to be in conditions of extreme poverty. The GINI coefficient is 0.31.

Health care is excellent with at birth life expectancies of 77.9 years for males and 78.0 years for females. The illiteracy rate is low at 2% of the population over fifteen years of age.

Solid waste disposal is in a secure landfill which doubles as a source of marl for road construction. The landfill life is estimated to be twenty years. Volume reduction is practiced on bulky construction wastes. No recycling is practiced.

All solid waste management services are contracted out to private contractors on the basis of competitive bids. Solid waste management costs are approximately US\$80 per ton and represents approximately 1.7% of the annual national budget.

Solid waste management services cover 100% of the population although some private transportation of waste may be required in the less developed areas of the island primarily in the northeast section. Private transportation is also used for construction wastes.

No legal or regulatory framework currently exists but this is expected to be rectified with the establishment of the Anguilla Health Authority this year.

The major strength of the system is its functionality at moderate cost.

The major weakness of the system is the lack of an educational component related to solid waste in the public school system. Minor weaknesses include the current lack of a regulatory framework and the lack of a recycling system.

2. INTRODUCTION

The process of developing the data required to produce Evaluation 2002 was carried out by a PAHO representative in cooperation with the Primary Health Care Department and the Environmental Health Unit of the Government of Anguilla. Extensive cooperation was received from the Statistics Department of Anguilla and from Halcrow Group Ltd. UK.

Anguilla is a very small country in the Caribbean and, as a consequence, all local participating bodies are directly linked to the National Government.

Anguilla is a Dependent Territory under a Governor appointed by the Foreign Colonies Office (FCO) of the UK Government. The Anguillan Government controls all internal affairs including primary health care the department under which solid waste management falls.

The Government consists of seven members elected by popular vote. The group holding a simple majority of the total seats serves for a maximum of five years, in accordance with the standard British system. Under normal circumstances, elections are held at the option of the Government after somewhat less than the five year maximum.

Solid waste management does not constitute a major factor in local planning strategy. The solid waste system that is in place operates to the full satisfaction of the Government. The last major planning that was undertaken resulted in the privatization of the waste disposal system. Disposal is in a secure sanitary landfill located downwind from most residential areas. The area available for landfill is estimated to be adequate for the next twenty years without expansion. With so large an area, the necessity for volume reduction is not critical. Open burning is practiced for bulky wastes such as construction lumber and non-returnable pallets. Nuisance from the resulting smoke and odour is minimized by restricting burning to days when the wind is in a direction that puts the landfill site downwind of any residence.

The current solid waste management system is considered adequate and is unlikely to change materially in the near future. The Government is showing a tendency to contract out most of the services associated with the system. The Government expects to reduce its involvement to pure supervision of the system in a relatively short time.

The only major disposal problem is for spent tires which cannot be burned. The Government is examining the possibility of shredding these items for shipment off island as a fuel.

3. BACKGROUND

Physical Characteristics

Anguilla Is a relatively flat coral island approximately seventeen miles long by four miles wide at the widest point. The highest point is approximately 200 feet above sea level. There is generally very little topographical relief to the land surface. This results in a road system that provides, for the most part, easy access to virtually all parts of the island.

The climate is generally dry and the lack of significant surface relief tends to minimize the possibility of rain. Surface vegetation is largely scrub in the order of eight to ten feet in height. The surface soil is largely marl and agriculture is limited to isolated small areas where pockets of better soil exist. The total lack of surface water limits this type of activity.

Potable water is generally obtained by reverse osmosis desalination.

There are several surrounding small islands and cays, but these are uninhabited.

Socio-Economic

The population of Anguilla was 11,561 according to the most recent census carried out in 2001. The rate of population increase is moderate at 3.2% per annum.

Anguilla supports a very "high end" tourist population. Long term tourists add approximately 1,100 persons to the permanent resident population. The relatively low transient (tourist) population appears to reduce both the variability of the amount of waste requiring disposal at any given time and the overall per capita waste generation rate.

There also appears to be little tendency to attract offshore workers for the construction industry. Casual observation indicated only a moderate level of construction at the time of the survey. Such construction wastes as did reach the landfill were segregated into flammable and non-flammable categories. The former were burned while the latter were disposed of in the landfill.

There is a fairly substantial interest in composting at the private level. The end result is that very little in the way of biodegradable waste reaches the landfill.

The average total per capita generation rate is 1.218 kg/person/day.

An annual residency system applies to expatriate land owners who own villas and other housing. Expatriate homes tend to be located along the shoreline and this may eventually cause some social problems resulting from the removal of desirable land from local control.

Anguilla is striving to develop a broadly based telecommunications system, both for its own use and for off-shore businesses. There is now a major Cable and Wireless facility located in The Valley, which is the capitol. In addition, Anguilla has developed an online company registration system known as the Anguilla Company Online Registration network (ACORN).

Health

Health care appears to be excellent on Anguilla. The main hospital is located in The Valley and there are five district health centers throughout the island. In addition, there is one private medical facility in the western section of the island and one located in the east. Health care services are heavily subsidized by the Government.

Life expectancy at birth is 77.9 years for men and 78.0 years for women. Infant mortality varies widely due to the low number of births reported each year.

As with most other islands of the Caribbean, dengue fever is known to be present. Thirty cases of confirmed dengue, mostly type 3, were reported in 2002. It is believed that the breeding ground for the mosquito that acts as a vector is probably in potholes in the rock surface located across the island. It is, however, impossible to eliminate the waste tires stored at the landfill as a source of standing water and consequently a mosquito breeding ground. No survey has been carried out to determine whether this is actually the case.

Human Development Indicators

A country poverty assessment carried out by Halcrow Group Ltd. UK for the Statistics Department indicated that of 3,730 total households, 80% were considered to be non-poor. Of the remaining 20%, 18% are considered as poor and 2% are considered to be in extreme poverty.

The GINI coefficient is moderately high at 0.31.

The illiteracy rate for the overall population over fifteen years of age is 2%. No separate data is available for men and women.

Education is provided at Government cost for all children up to the age of sixteen. There is one secondary school on the island. A building to house the first and second form students was opened in the fall of 2001. There is one private primary school.

No environmental education on solid waste issues is included as an integral part of the curriculum in the public system.

Evolution of the Solid Waste Management System

The solid waste management system in Anguilla falls under the Ministry of Social Development. Direct responsibility for the system is vested in the Primary Health Care Department. Supervisory responsibility rests with the Environmental Health Unit. The solid waste system has evolved from a Government operated system to the current privatized system. Privatization has been done in stages and now the system is completely privatized.

The Government expended approximately 1.3% of its annual budget of solid waste disposal.

The chain of responsibility is considered fairly typical for the Caribbean.

The system supplies collection services on a contract basis and utilizes a secure landfill for disposal. No pre-disposal treatment is provided. There is estimated to be twenty years life in the landfill and there is therefore little need for extensive volume reduction. The secure landfill consists of excavations approximately 20 feet deep by 40 feet wide in the coral of the island. The coral is essentially impervious but there are surrounding trenches cut to eliminate seepage. The landfill is not lined.

Some open burning of bulky construction wastes is practiced.

The landfill operation is unusual in that the landfill area is actually an active site used by the Public Works Department (PWD) for mining of marl. The marl that is removed is used for road construction. The pits that are left by this mining are used to dispose of the solid waste. Since excavation costs are charged to the PWD, the actual disposal costs for solid waste are minimal.

The long life of the landfill and the consequent lack of need for volume reduction also reduce the incentive to recycle. In fact there is a very small glass recycling program, but this program is admitted to be severely limited in effectiveness.

There is a small biomedical waste incinerator associated with the hospital. There are no industrial wastes.

Total solid waste management costs in 2001 were estimated to be US\$80.25 per ton of waste.

Level of Investment

In mid 2002, the Government contracted out the landfill operation, thereby eliminating virtually all direct labour associated with solid waste management. This action had distinct financial implications as to levels of government investment in solid waste management.

The Government now has essentially no investment in machinery or vehicles for solid waste. It is estimated that the private companies may have approximately US\$1.15 million invested in collection equipment in the form of standard compactors.

Future investment will, of course be purely by the contractors and, as such, it is impossible to accurately predict.

The contracting out of the landfill does not appear to have reduced the budgetary allowance for solid waste management. In 2001, the Government budgeted 1.15% of the national budget for solid waste. In 2002, the year the landfill operation was contracted out, the amount rose to 1.69% of the annual budget.

The sector is financed out of general Government revenue. There are no other sources of funding. The economic sustainability is based on general Government revenues. While there are the usual financial problems associated with Government financing, there is no danger of Government bankruptcy affecting the solid waste system. Where tipping fees have been tried in the Caribbean, the end result has generally been illegal dumping of waste in inappropriate sites, which in turn results in disproportioned costs to the Government to clean-up.

4. FUNCTIONAL / OPERATIONAL STRUCTURE

Institutional Position

As noted, solid waste management is technically controlled by the Environmental Health Unit. However, with the contracting out of the landfill operation, the function has largely been reduced. An Environmental Health Officer with special responsibility for solid waste dedicates a small portion of his time to overseeing solid waste activities, in addition to his other duties. This person reports to the Principal Environmental Health Officer.

Policies, Legal and Regulatory Framework

It is the policy of the Anguillan Government to provide full solid waste management services to the public at no direct cost. Such costs as are incurred are paid for out of general revenues. No direct fees are levied for collection, tipping fees or disposal.

There is presently no legal framework or regulations governing solid waste management. However, such legislation and, presumably regulation, will be developed under the Anguilla Health Authority when it comes into effect in July of 2003.

Centralization of Service

Solid waste management is indeed centralized under the national government, but this is something of a misnomer since virtually all the activity is contracted out and only minimal supervision is provided by the Environmental Health Unit.

Functions such as planning, development of regulations, technology assessment and human resources development are carried out by the Ministry of Health and the Primary Health Care Department.

Private Participation

Outside of the collection and landfill operations, there is no private participation in solid waste management.

Sweeping

Sweeping of streets is carried out by the PWD.

Planning

There are no current plans to alter the system beyond the changes that were made in 2002 relative to the landfill operation.

Some thought is being given to the problem of disposing waste tires. The volume is too low to make a full time shredding operation economic, but there are few other options and the accumulation of tires presents a fire hazard as well as a potential health hazard. At the present time, consideration is being given to shared use of a tire shredder known to be located on Saba.

Recycling has been considered, but is not considered practical in view of the small population, the capacity of the landfill and the distance from somewhat uncertain markets for the recovered waste.

5. DELIVERY OF SOLID WASTE MANAGEMENT SERVICES

Quality and Coverage of Services

Essentially 100% of the population is covered by solid waste management services.

Local collection varies between two and four times per week depending on the collection zone and the terms of the collection contract. In general, the most heavily populated zones are collected more frequently. Collection is from wheeled containers which are placed at the sides of the road for pickup. The containers are supplied by the contractors.

The system appears to function adequately throughout the island.

Cost Analysis

Solid waste management costs total approximately US\$80 per ton with approximately 72% of the total cost being absorbed in collection. In this case, the disposal portion is extremely low at approximately 5% of the total cost. This is due to the involvement of the PWD in excavation of the landfill trenches to recover marl.

No rates are charges by Government for any services related to solid waste management. While there is some incentive to make such charges - which would make the system at least somewhat self supporting - there is an ongoing fear that such charges would result in disruption of the system and non-payment of any such imposts.

Municipal Development

Municipal development does not appear to be rapid in Anguilla and is not obviously affected by solid waste management practices. In reverse, continued development in the more remote areas may lead to improved roads and then to an extension of the collection areas and possibly the collection frequency.

Administration

Administration of solid waste currently involves the Chief Environmental Health Officer and the Manager the Primary Health Care Department.

Shared or Participatory Management

There is no management system other than the one noted above.

Small Business Involvement

No small businesses are involved other than the collection contractors and the landfill contractor.

Micro Enterprises

No local micro enterprises are involves with the solid waste management system.

Sectoral Projects

There are no current sectoral projects.

Funding

All funding for the solid waste management system is from general revenues.

6. STRENGTHS AND WEAKNESSES OF THE SYSTEM

Strengths

The system exists and functions well with a minimum of attention. The contract nature of the overall system requires a minimal amount of Government resources and thereby eliminates the need for extra public service personnel.

While it is not a particular strength, the competitive nature of the contract award system tends to maintain costs at a reasonable level.

Weaknesses

The absence of a formalized educational component on solid waste must be considered a weakness. It is possibly not urgently needed at present, but continued development of a small island could (and probably will) lead to a situation where the system for handling solid waste will require additional cooperation and input from the public. This extra input is unlikely to occur in the absence of education.

The current absence of legislation and regulation is a weakness in as much as it leaves the Primary Health Care Department without firm direction in managing the contractors. At the same time, the system, at present at least, functions adequately without it and the Anguilla Health Authority legislation is expected to correct the situation.

The lack of a more formal recycling program may become a weakness if there is a substantial increase in the quantity of waste reaching the landfill. However, this appears to be well in the future if at all.

Limiting Factors

At present there are no known limiting factors which affect the system.

7. HEALTH, ENVIRONMENT, ECONOMIC AND SOCIAL DEVELOPMENT

Health and Environment

There does not appear to be any clearly demonstrated health effect of solid waste management practices on the health picture in Anguilla. The most probable indicator would be the establishment of a clear link between water caught in tires and the breeding of dengue carrying mosquitoes. No such link has been established although no studies in this specific area have been carried out.

The other vectors such as vermin are limited by the relative absence of putrescibles in the landfill.

The environment is little affected by the landfill, primarily because of the downwind location and secondarily by the scrub nature of the local vegetation.

Epidemiological Studies

No epidemiological studies have been conducted in the absence of any obvious health problems.

Occupational Health

There are no apparent occupational health problems associated with the solid waste management system.

Equity of Services

The solid waste management system appears to provide fully equitable service to the general public of Anguilla.

Economic Value

The solid waste management system undoubtedly provides economic benefits to the tourist industry in as much as it removes unsightly waste and waste disposal from public view. The actual value of this benefit is, however, difficult to quantify.

8. PARTICIPATORY MANAGEMENT

Community Participation

Community participation in solid waste management is non-existent.

Non-government Organizations (NGO's)

No NGO's are involved in solid waste management in Anguilla.

Education

At the present time there are no plans to develop an educational component related to solid waste management.

Hygiene and Occupational Safety Programs

No programs exist in these areas.

Scavenging of Waste

Scavenging of waste on either a formal or informal basis is not carried out in Anguilla.

9. FUTURE PROSPECTIVES

Investment and Reorganization

The Anguillan Government appears to have reached the ultimate situation that has been their objective. Capital investment is now limited to the private sector and the employment of scarce Public Service resources has been minimized.

Reorganization of the system is scarcely possible beyond the point reached in 2002.

Reform and Modernization

Neither is required nor is any contemplated. The solid waste system is under the loose control of the Ministry of Health. This will continue to be the case when privatization of the system is completed in 2003. Control is exercised by enforcement of the various contracts related to solid waste collection and disposal.

Alternatives

Recycling is not a viable option and no other alternatives are immediately obvious.

Regulation

The development of regulations on solid waste management would be marginally useful. It is not, however, a major priority.

Financial Requirements

The Government has acted to limit financial requirements in so far as possible by contracting out the services. The contract cost of such services tends to be limited by the competitive bidding process.

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10. ACRONYMS

ACORN	Anguilla Company Online Registration Network
FCO	Foreign Colonies Office
NGO	Non-government Organization
PAHO	Pan American Health Organization
PWD	Public Works Department
UK	United Kingdom
US	United States

12. WORKING TEAM

Dr. Bonnie Richardson-Lake
Manager, Primary Health Care Department
Government of Anguilla

Lynrod Brooks
Chief Environmental Health Officer
Environmental Health Unit
Government of Anguilla

M. Foster Rogers
Health Planner
Mnistry of Health
Government of Anguilla

Penny Hope-Ross
Manager, Statistics Department
Government of Anguilla

W.I. Walker
Technical Consultant
Pan American Health Organization