

Arran Waste Strategy

Final Report

**Report to Score Environment Ltd
North Ayrshire Council**

February 2001



CONTENTS

| | |
|---|----|
| 1. SUMMARY..... | 2 |
| 2. WASTE ARISING ON ARRAN..... | 4 |
| 2.1. METHODS OF CALCULATING WASTE ARISING..... | 4 |
| 2.2. FUTURE WASTE ANALYSIS..... | 5 |
| 2.3. ESTIMATE OF LANDFILL CAPACITY..... | 6 |
| 2.4. CURRENT RECYCLING..... | 6 |
| 3. ALTERNATIVE DISPOSAL ROUTES..... | 8 |
| 3.1. OPTION 1 - CONTINUE CURRENT PRACTICES..... | 8 |
| 3.2. OPTIONS 2 AND 3 – LOCAL RECYCLING AND REUSE AT DIFFERING SCALES..... | 10 |
| 3.3. COMPANY VISITS..... | 15 |
| 3.4. POTENTIAL WASTE MINIMISATION FORUM ON ARRAN..... | 16 |
| 3.5. CUSTOMER SURVEY..... | 18 |
| 3.6. SURVEY OF BULKY DOMESTIC WASTE..... | 18 |
| 4. FUNDING..... | 20 |
| 4.1. EUROPEAN SOURCES..... | 20 |
| 4.2. ENTERPRISE NETWORK..... | 21 |
| 5. CONCLUSIONS..... | 22 |

LIST OF FIGURES

| | |
|---|----|
| 1 | |
| FIGURE 1. HOUSEHOLD WASTE ARISING (VOLUME M3) FOR THE ISLAND..... | 4 |
| FIGURE 2. TYPICAL WASTE STREAM..... | 9 |
| FIGURE 3. NAC CUSTOMER SURVEY..... | 18 |
| FIGURE 4. RESULTS OF SURVEY OF BULKY ITEMS COLLECTED BY SPECIAL UPLIFT..... | 19 |

LIST OF TABLES

| | |
|--|----|
| TABLE 1. ESTIMATES OF HOUSEHOLD NUMBERS..... | 5 |
| TABLE 2. ESTIMATES OF LIFE SPAN OF THE BRODICK TIP..... | 6 |
| TABLE 3. ARCO OPERATING COSTS AND INCOME..... | 7 |
| TABLE 4. COST OF WASTE COLLECTION AND DISPOSAL..... | 9 |
| TABLE 5. POTENTIAL TONNAGES OF WASTE..... | 9 |
| TABLE 6. BARRIERS TO RECYCLING IN THE HIGHLANDS & ISLANDS..... | 10 |
| TABLE 7. STEERING GROUP MEMBERS..... | 10 |
| TABLE 8. ESTIMATE OF DIVERSION OF COMPOSTIBLES..... | 13 |
| TABLE 9. ORGANISATIONS CONTACTED..... | 15 |
| TABLE 10. AGENCIES INVOLVED IN POTENTIAL WASTE/ENV FORUM..... | 16 |
| TABLE 11. REGIONAL PRIORITY RATING..... | 20 |

LIST OF APPENDICES

| | |
|--|--|
| APPENDIX 1 STRATHSPEY WASTE ACTION NETWORK – ADOPT A COMPOSTER PROJECT - SUMMARY | |
| APPENDIX 2 SOUTH AYRSHIRE COUNCIL – HOME COMPOSTING LEAFLET | |
| APPENDIX 3 ORGANISATIONS CONTACTED | |
| APPENDIX 4 ARRAN COUNCIL FOR VOLUNTARY SERVICE – CONTACT LIST | |
| APPENDIX 5 NORTH AYRSHIRE CUSTOMER SURVEY | |
| APPENDIX 6 EXAMPLE OF COMPLETED SURVEY FORM OF BULKY ITEMS | |
| APPENDIX 7 EUROPEAN STRUCTURAL FUNDS SPECIAL PROGRAM FOR THE HIGHLANDS AND ISLANDS | |

1. Summary

Islands in many ways represent a microcosm of the rest of the country, as problems associated with the generation and treatment of waste are more directly apparent. However, due to the inevitably high costs involved in transport to and from islands, combined with relatively small community sizes, islands and other remote rural areas may need to find unique and targeted local solutions to their waste problems.

Arran is one such community that, due to pressures of landfill capacity and the uncertain future of the community led, Arran Recycling Company (ARCO), is faced with a pressing requirement to develop a new waste management strategy. Indeed many islanders have to some extent been involved one way or another with recycling projects although ultimately the majority have not been sustained in the long term that has led to disillusionment. However, a consultation exercise of business, community and householders demonstrated that there still exists significant interest throughout the island in an integrated strategy but it requires to first of all engage and include the islanders to ensure their support and be able to demonstrate that it is a considered and integrated strategy.

Options

Given the volume and composition of waste generated on the island it is unlikely that solutions such as incineration with energy recovery or the development of a materials recovery facility are likely to be feasible options. Consequently there is a real potential to develop a waste strategy that engages local businesses and the community, embracing the principles of proximity and sustainability.

Following the fall to zero for the price of green cullet offered to ARCO by the British Glass Recycling Company, some measure of success in this respect has already been achieved since **J. Thompson Construction Ltd** were persuaded instead to crush and utilise the glass collected from the bottle banks in local building works. Home composting is also likely to offer an effective local solution for organic wastes and ENTRUST have confirmed that as an island, landfill tax credits could be used to subsidise the cost of composters, particularly if organised through a community group such as ARCO. Additional local solutions such as a Creative Resource Centre (for the repair and resale of furniture and domestic items), the organisation of the collection of aluminium cans, chipping of wood wastes, the pursuit of alternative options for paper etc are likely to require a paid position for at least one individual as well as appropriate premises. Even the promotion and support for home composting is likely to require the services of a resourced individual.

Funding

One possible mechanism for supporting a sustainable waste strategy for Arran is through the **Highlands & Islands Special Transitional Programme 2000-2006**. Under the scheme, Arran would be likely to be eligible for funding for projects complying under Priority 2 – *Creating the conditions for Regional Competitiveness*. Measure 2.4 – *Waste management, Water and Sewerage Provision and Pollution Control*, with the island having a high priority regional rating of 4. Given the implications for local business on the island, for the types of projects envisaged, **Argyll and Islands Enterprise** would also be likely to provide financial support through the existing LEC network.

The Scottish executive also announced in October that through a **Strategic Waste Fund** that £50 million will be made available to support local authorities in the implementation of the National Waste Strategy. Furthermore an additional £6million will be provided to support various waste initiatives.

In addition to North Ayrshire Council, Arran falls under the jurisdiction of a unique range of agencies with an interest in the environment. These include, Highlands & Islands Enterprise, Argyll & Islands Enterprise, Ayrshire and Arran Tourist Board, Energy Agency, West of Scotland Water and SEPA. Initially convened to consider how best to support North Ayrshire Council's proposed Waste Management Strategy (possibly through a waste minimisation forum

for business) the above agencies in discussions have developed the view that a broad environmental programme that seeks to present Arran as an environmentally friendly island destination - a ***Green Scotland in Miniature*** - could provide significant opportunities for the islands economy, and is currently being actively pursued.

Such a project would be likely to present a very strong case funding.

This document comprises the final report for the work undertaken in the development of potential Waste Strategies for the Island of Arran, conducted by the Caledonian Shanks Waste Centre, funded by SCORE Environment Ltd through the landfill tax credit system.

2. Waste Arisings on Arran

2.1. Methods of Calculating Waste arisings

An essential requirement of any waste study is to quantify the amount of wastes arising. Three methods are available to NAC for estimating the wastes for Arran. The installation of a weighbridge for Arran is not a practical option:

- Assessment of waste based on landfill volume – currently used by NAC
- An estimate of waste based on vehicle movements – also currently used by North Ayrshire Council (NAC) for the purposes of determining landfill tax;

A prediction of waste, based on properties served and estimates of bin bags collected from both households and commercial sites. This approach is only possible because an extensive list of properties from which waste is collected, is readily available.

Prior to the introduction of the landfill tax, the volume of waste deposited in the Brodick tip was assessed based on measurement of cell sizes. This was the method of assessment used until February 1999, when in accordance with HM Customs and Excise Notice LFT1, volumes were calculated based on known vehicle cubic capacities – which assumes vehicles are delivering full loads on each trip.

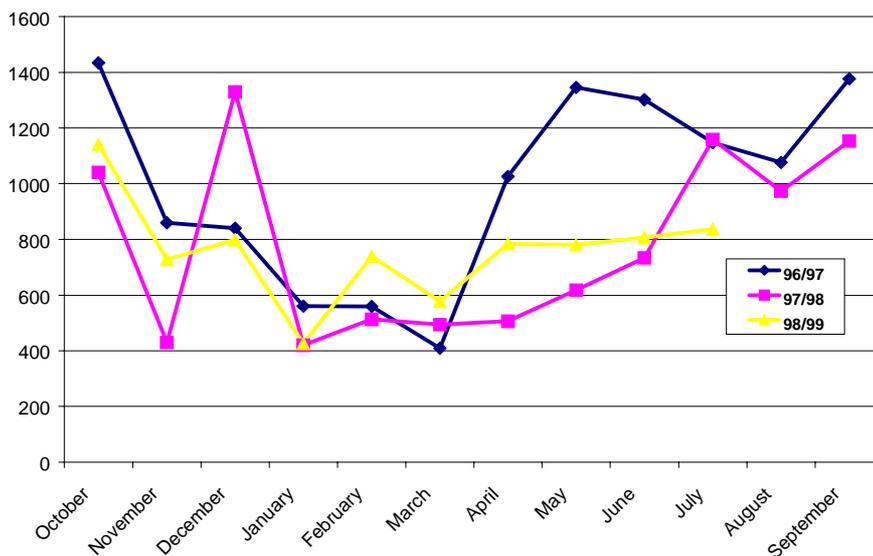


Figure 1. Household waste arisings (Volume m3) for the Island

Figure 1 illustrates that the new measurement reasonably accords with the previous years volumes but that there are significant variations even between 96/97 and 97/98. It would appear that the volumes of waste to the tip vary considerably and it is also not clear if the new system is more or less accurate.

Estimate of Wastes Generated

The estimates of domestic waste generated are based on the national average of approximately 1 tonne of waste per year per household (i.e 19.2kg per week). *N.B Cordah Report for Aberdeenshire Council (Household Waste Arisings in Rural Areas) found that the average weight of household waste per week in rural areas was 18.93kg.* Three estimates for the numbers of households have been used as shown in the following table.

The figures for domestic wastes have been combined with estimates for commercial waste based on the numbers of collected bags from Council records. It is assumed each sack weighs approximately 12.5Kg (*previous tests in Glasgow found that 600/700 black bin bags weighed*

approximately 7.5 tonnes), thus suggesting commercial weights of 682 tonnes in the summer and 281 in the winter. The three estimates suggest that the total domestic and commercial waste arisings is between 3009T and 3414T per annum.

Table 1. Estimates of Household Numbers

| Valuation Roll and Council Tax Valuation | | Arran Population Enumeration Report (1997) | | Frequency table of refuse collection | |
|--|-----------------|--|-----------------|---|-----------------|
| 2840 Domestic and Commercial properties, including holiday homes. NA records give 177 commercial premises from whom waste is collected (119 + 58 seasonal). = 2663 Domestic | | 2479 permanent homes of which 606 are holiday houses with an average occupation of 17 weeks. | | 3000 Domestic | |
| <i>Permanent</i> | <i>Seasonal</i> | <i>Permanent</i> | <i>Seasonal</i> | <i>Permanent</i> | <i>Seasonal</i> |
| 2663-606= 2057 | 606 | 2479-606= 1873 | 606 | 1802+427= 2229 | 573+198= 771 |
| (19kg x 52weeks x 2057) + (19kg x 17weeks x 606) = 2228 Tonnes | | (19kg x 52weeks x 1873) + (19kg x 17weeks x 606) = 2045 Tonnes | | (19kg x 52weeks x 2229) + (19kg x 17weeks x 771) = 2451 Tonnes | |
| + 963 Tonnes Commercial | | | | | |
| 3191 Tonnes | | 3009 Tonnes | | 3414 Tonnes | |
| @15kg =2722 T | | @15kg = 2579 T | | @15kg = 2898 T | |

In accordance with LFT1 for sites without weighbridges, the conversion factor from Appendix B for non compacted household waste of 0.2 has been used to calculate the landfill tax to be paid by North Ayrshire. This provides a total estimate of 1874 Tonnes. Some caution is required in comparing the assessment based on volume and the alternative estimates calculated. Apart from the variation in estimates of household numbers the two other main sources of potential discrepancy arise from the assumptions made on occupancy rate and the average arising per home (particularly as regards bulky uplifts) and without more precise information on household waste arising the argument for a more detailed analysis remains.

2.2. Future Waste Analysis

How the precise recording and estimates of volumes of special uplifts of bulky household items is controlled is unclear. Calculation of tonnage by cell size or by vehicle cubic capacity provides rough estimates, which although approved for calculation of the landfill tax, still leaves some degree of uncertainty in waste volumes for the purposes of determining the life expectancy for the landfill, and any waste strategy for the island. For estimates of particular materials in the waste stream given the wide variance of figures a more rigorous analysis may be necessary.

A specific exercise to check the actual tonnage of material in each of the loads delivered over a period of say one to two weeks and comparing this with the estimates from the cubic capacity of the vehicles would be valuable. A check of the bulky uplift items was undertaken –see **Section**

3.6 This provided an annual estimate of a further 504 tonnes which combined with the measured 1874T provides a total annual figure of 2378T.



A caravan being dumped!

2.3. Estimate of Landfill Capacity

An estimate of the working life of the Brodick Landfill Site was undertaken using the original March 1997 survey data by North Ayrshire Council as amended by the proposed finished levels shown on the Enviro Centre drawings of 1998. These proposed levels vary from Proposed Finished levels to Maximum Finished Levels which include a settlement allowance of 20% finished level minus 1 metre cover. The estimate of total available volume therefore varies.

The estimate of annual volumes taken, range from 9371 m³ (1874tonnes/0.2) which is the 97/98 figure used for calculation of Landfill Tax to 17070 m³ (3414 Tonnes/0.2)

| | Total Volume m ³ from March 1997 Levels | No of years available for an annual vol of 9371m ³ | No of years available for an annual vol of 17,070m ³ |
|----------------------|--|---|---|
| Basic Finished Level | 100694 m ³ | 10.7 years | 5.89 years |
| Max Finished Level | 124191 m ³ | 13.3 years | 7.27 years |

Table 2. Estimates of Life Span of the Brodick tip

The estimate of annual volume of waste arisings is therefore critical in determining the future life of the site. Taking the average of the two volumes and using the Max finished level contours would suggest that the landfill had a life capacity of **10.3 years** from March 1997 – i.e capacity would be reached by June 2007. ***It should be stated that these calculations have been based on measurements from relatively small scale drawings and that conservative estimates were used.*** A further survey of the existing landfill profiles is required to help determine the volume of waste that has been placed since the North Ayrshire survey of March 1997, and would assist in determining the annual volumes of waste generated.

2.4. Current Recycling

Glass

Until recently the majority of glass recycled was organised by the Arran Recycling Company (ARCO). Glass is collected and stored at the Brodick Landfill. Having operated for a number of years with a fair level of support from the community, the company as can be seen from the following table was only barely covering their costs and was finding the operation increasingly awkward. This disenchantment culminated in advising North Ayrshire that they intend to cease trading on the day of their next AGM in July 2000.

| 98 / 99 | Green Glass | Flint Glass | Amber Glass | Aluminium |
|------------------------|-------------|--------------|-------------|-----------|
| Income /tonne | £6.50 + VAT | £27.50 + VAT | £23.50 +VAT | £400 +VAT |
| Recycling Credit/tonne | £9.69 | £9.69 | £9.69 | £9.69 |
| Total Income /tonne | £19.02 | £43.70 | £39.00 | £48.13 |
| Tonnes Recyled | 37.75 | 19.06 | 9.01 | 0.077 |
| Projected Income | £718.00 | £832.92 | £351.39 | £37.07 |

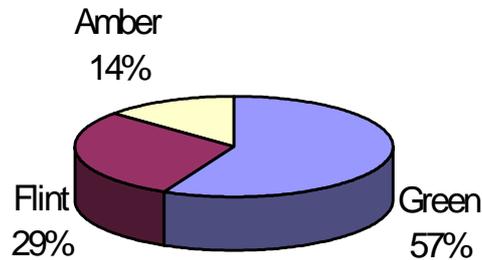
Total Income £1939.38

| 98 / 99 | Green Glass | Flint Glass | Amber Glass | Aluminium |
|--------------------|-------------|-------------|-------------|-----------|
| Haulage per load | £190 | £190 | £190 | NAC |
| Ferry fee per load | £65 | £65 | £65 | NAC |
| Total Cost / lorry | £299.63 | £299.63 | £299.63 | zero |
| No Loads in 98/99 | 3 | 2 | 1 | 1 |
| Cost | £898.88 | £599.26 | £299.63 | zero |

Expected Total Cost £1797.77 giving a Net Predicted Income of £141.61

Table 3. Arco Operating Costs And Income

The cessation of ARCO's recycling activity was however precipitated when the British Glass Recycling Company advised that they were no longer offering any value for green cullet. The total annual tonnage of glass collected is approximately 66T, of which the majority is green. The consequences of which were that there was no option but to find local solutions for the glass. Essentially 3 options were available:-



1. Dispose of glass to landfill
- 2.



Gardners Blend

Process bottles to produce decorative glass in situ. The use of a simple cement mixer could produce some relatively low grade 'beach glass'. The colour mix is however quite restrictive and would be enhanced by other colours such as blue etc. Nevertheless the tumbled glass could be made available to individuals &/or sold to garden centers.

3. Following a meeting with ARCO and Councillor John Sillars on the 15th March 2000, a meeting was held with North Ayrshire Council, CSC and John Thomson Construction Ltd who agreed to continue under their existing contract with North Ayrshire Council to uplift the glass collected in the bottle banks. Thompsons were persuaded to crush the glass in their quarry for utilisation in local building works. However 66 tonnes represents only a very small proportion of all the potential glass on the island (estimated at 278 Tonnes) and efforts and publicity will be necessary to increase this flow. Thompsons rock crushers are capable of processing 100 tonnes an hour of material and would seem likely to be able to contend with all the glass that could potentially be collected.

Metals

Lowmac Alloys report that they uplift metal scrap in the form of white goods and other items on request. As Lowmac undertake a variety of work for North Ayrshire they report that the operation is essentially a loss leader for them as scrap steel achieves only approx £15 per tonne. They estimate that taking into account driver costs and fuel, each trip costs £250 overall for which they recover approximately £80 from the material. Currently these trips are made as special one off's and no attempt to operate a backload is made.



Compost

Little organized composting currently exists on the island.

Cardboard & Paper

No cohesive approach exists to this waste stream although a number of small projects have been undertaken which include:-

- The CO-OP, who collect and compact their own in store paper and cardboard which is transported to Cumbernauld.
- Lamlash High School ran a successful project in which they collected 1 tonne of paper in a week which was used to produce paper briquettes for sale by a local garden centre.

Other wastes

There is a growing problem of disposal of cooking and mineral oils. Current estimates suggest that currently 5000/6000 litres require to be disposed of and that this volume is currently growing by at least 25Litres per week. Previously the cooking oil was collected by Tom Skinner who collected the oil for processing into animal feed. Since the recent scare of PCB contamination from the mixing of this oil with hydraulic oils the operation has been suspended. Blackwood offer a relatively cheap service of collecting oil for agricultural use, but require full traceability. Landstar (Orcal) offer a more expensive bulk collection system. These options and others require to be more fully explored and costed.

3. Alternative Disposal Routes

With the above waste data and the recycling programmes as described, it is necessary to set out the practical options available for the island. These are considered to be the following:

- **Option 1** - Continue to landfill until it is necessary to find alternative disposal routes, possibly on the mainland, with nominal or minimal recycling – do nothing option.
- **Option 2** -Limited recycling programme, supporting the continuation of the glass recycling programme and some awareness raising of recycling initiatives and a home composting programme.
- **Option 3** - More extensive recycling – an active programme to secure European funding and to engage businesses and the community towards sustainable waste management practices.

3.1. Option 1 - Continue current practices

Current waste collection Regime

The current financial position with regard to waste collection and disposal is estimated as follows.

| Operator | Area | Annual Cost 1997 |
|-----------------|---------------------------|-----------------------------|
| McKelvie | Brodick, Corrie | |
| Middleton | Lamlash | |
| Currie | Whitting Bay | |
| Cameron | Blackwaterfoot, Lochranza | |
| Total | | £108,640 |

| Vehicle | Lease | Maint. | Fuel | Total |
|-----------------------|--------------|---------------|-------------|----------------|
| JCB Wheeled Shovel | £12,540 | £8,632 | £1,759 | £22,931 |
| Transit 90 C/C Tipper | £3,068 | £5,928 | £2,405 | £11,401 |
| Total | | | | £34,332 |

| Other Costs | Description | Annual Cost |
|-----------------------|-------------|-----------------|
| Employee Costs | | 50,091 |
| Rates | | 480 |
| Rents | | 960 |
| Electricity | | 796 |
| Supplies | | 4622 |
| Administrations Costs | | 1504 |
| Work by Contractors | | 4358 |
| Other Expenditure | | 6090 |
| Total | | £68,901 |
| Gross Total | | £211,873 |

Table 4. Cost of Waste Collection and disposal

From the above tables the estimated cost of Waste Collection and disposal for the island (based on 0.2 factor) of 1874 tonnes = £113 / tonne plus landfill tax currently £11 / tonne.

Future Disposal

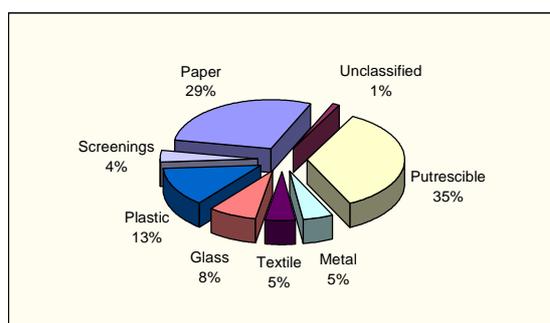
Once the existing void space at Brodick is filled it will be necessary to make either some major decisions, in terms of planning applications with the additional implications of possible stricter requirements of a revised site licence. Any engineering on the site is likely to be costly given the relatively small size of the site and the low tonnages of waste being received.

If in the extreme case the site is closed and waste has to be transported to the mainland, significant transport costs will be incurred. Currently Calmac charge £4.32 per half metre length + vat for vehicles on the ferry on a one way trip. For a 12m vehicle with 20 tonnes of waste the cost would be typically £240 for a return journey. Assuming 3000 tonnes of waste shipped from the island, the ferry costs would be £36,000 and 150 vehicle movements per year, not including any capital or vehicle costs to provide the service. This adds £12 per tonne for the cost of ferry transport alone.

Potential Material in the waste stream

The potential quantity of materials in the waste stream is uncertain but based on a typical mix for Scotland the potential tonnages are as shown.

Figure 2. Typical Waste Stream



| Material | Measured | | |
|-----------------|-----------|-----------|-----------|
| | Estimated | 0.2Factor | 0.4Factor |
| Glass | 278 | 169 | 338 |
| Paper | 1461 | 506 | 1013 |
| Metals | 155 | 94 | 188 |
| Misc | 526 | 319 | 638 |
| Plastics | 247 | 150 | 300 |
| Organics | 1051 | 638 | 1275 |
| Wood ? | ?? | ?? | ?? |

Table 5. Potential Tonnages of Waste

Most significantly, uncertainty exists over the predicted life of the tip if the basic volumes and compactions are still unclear. It is also necessary to be clear what the implications of the Landfill Directive will be for island communities after the consultation process is complete and the legislation becomes statute.

3.2. Options 2 and 3 – Local Recycling and reuse at differing scales.

The management of waste in the Highlands and Islands faces a unique set of challenges compared to urban and city locations. Low population densities and large distances travelled to collect materials and reach potential markets result in much higher collection and onward costs than elsewhere. The action on waste management in remote areas is generally undertaken by individuals or voluntary groups and Local Authorities.

The Local Authorities face the same economic hurdles on the viability of recycling and although some work closely with community groups this is not always the case. As identified in a recent consultation exercise with the voluntary sector on the National Waste Strategy undertaken by SEPA¹ a number of additional barriers exist as highlighted in Table 2.

| | |
|-----------------------------------|---|
| Legislation | Both EU & UK designed to suit areas of dense population. Current definition of waste restricts its use as secondary material resource. |
| Public Awareness | Considered low, and coupled with apparent apathy. |
| Economics | Low or non-existent prices for recyclate. Lack of funds for project development & capital investment. Dependence on volunteers. |
| Business Aims | Focus on cost & profit, coupled with low waste costs result in a disincentive to waste minimisation, re-use, recycling etc. |
| Infrastructure Information | Lack of local infrastructure and co-ordination between organisations. Large amount available, but difficult to assess and not enough appropriate info for specific needs. |

Table 6. Barriers to Recycling in the Highlands & Islands

Over the last few years through personal contact, various groups and individuals have discussed and exchanged information on the problems of waste in remote rural areas and the relative lack of existing resources. To formalize these links and to more effectively bring together the wide range of knowledge and expertise being

developed, the **Highlands and Islands Network** was formed with representatives from a variety of interested and active groups.

Utilizing this experience it appears that for Arran there are a number of potential local scale projects which are worthy of further assessment and are considered in outline as follows.

| |
|--|
| .HIGHLANDS & ISLANDS COMMUNITY WASTE NETWORK - |
| Group for Recycling in Argyll and Bute (GRAB) |
| Waste: Highland Action on Minimisation (WHAM) |
| Environment Concern Orkney |
| Skye and Lochalsh Local Agenda 21 Group |
| Mull and Iona Waste Watchers |
| Friends of the Earth Scotland |
| Shetland Amenity Trust |
| Glasgow Caledonian University |

Table 7. Steering Group Members

Incineration

In many countries, wastes which cannot be re-used, recycled or composted are now disposed through the use of incineration with energy recovery. One turnkey system investigated as part of this study was that provided by **Organic Power**. The system has been used successfully in remote locations and in one Norwegian example provides steam heat for a sports hall, school and a retirement home. The system also provides an income from generation of electricity and through waste avoidance costs. Emissions are claimed to be well within European requirements.

In the Norwegian system, waste to be incinerated requires firstly to be baled and then plastic wrapped into 'maxi pellets' for stockpiling. Waste from the summer is stockpiled and used in the winter when low volume high energy demands exist. The plants run continuously all year and require to be permanently manned.

¹ Voluntary Sector Input to the National Waste Strategy, SEPA Head Office, 19th Nov 1998.

There may be a role for incineration on the island – however the minimum system size currently on offer requires a minimum of 3000- 4000 tonnes per annum. Direct plant costs are in the region of £1.1 million. With these specifications this option is not being pursued at this time.

Border Bio Fuels

Under the Scottish Renewables Order (SRO), a proposal is currently being considered to develop a 2MW power plant in Glencloy to generate energy from waste forestry products. The opportunity for this plant to also utilise waste paper and timber was explored but under the terms of the SRO, other waste products such as building timber and household wastes (including paper etc) are excluded, due to potential problems of contamination and pollution.

Glass

With the collection and processing of the glass by Thomson Construction for use as a concrete aggregate, the immediate problem of glass has been addressed. However in order to capture the additional 200 tonnes estimated to remain in the waste stream, is likely to require a combination of additional bottle banks in more public locations and perhaps arrangements with the larger hotels such as the Auchrannie for the collection of their glass. In the longer term it may be appropriate to also consider some of the higher value alternatives for recycled glass such as suggested by REMADE.

In Shetland for example, where very high shipping costs exist, it has never been viable to transport glass to Alloa and the glass is instead used in local building projects. In collaboration with Shetland Council who provide the glass from bottle banks, DECOCRETE a small local builder crushes the glass and uses it as a filler in pavement and drive ways. An innovative moulding system is used which allows the concrete and glass mix to be patterned in any of dozens of different varieties.

- Shetland Council estimate total volume of glass on the island as 1,000 - 1,200 t/pa.
- Currently the majority of the 400 - 450 tonnes currently collected comes from bottle banks.
- All recycled glass is used in the concrete pavements but opportunities also exist to produce crushed glass shot blast as an alternative to existing copper slag materials.
- In Shetland J-Blast industrial abrasive sells for £120 per tonne due to shipping costs. Decocrete can be produced for £60.
- No recycling credits paid.
- Licensed premises are offered reduced waste disposal charges to sort glass and co-operate with Decocrete.
- The National Recycling Awards 1999, hosted by *Materials Recycling Weekly* awarded. Decocrete & Shetland Council the joint award of **Best Partnership Project For Recycling**.

Cardboard and Paper

Various potential outlets for the utilisation of paper on the island exist and may include :-

Conventional Recycling

The CO-OP, who collect and compact their own in-store paper and cardboard which is transported to Cumbernauld, have indicated they are interested in supporting initiatives on the island. Mr McKellar from the Glasgow Office is currently exploring the opportunities

Animal Bedding

Collecting from a similar population base to Arran and working in concert with the local authority, Campbeltown WasteWatchers are currently uplifting up to 4 tonnes of paper a week which is primarily used to create animal bedding. The operation uses a single collection vehicle and a paper shredding machine (approx cost £25k). Eight personnel are employed some of whom have 'special needs'. Funding has been obtained from a variety of sources including ERDF, Lottery, Landfill tax and in-kind contributions from the council.

Vermiculture

Campbeltown Waste Watchers also run a vermiculture initiative utilising 'green waste'. The worm casts are then sold as a soil enhancer and the excess worms are sold as fishing bait.

Ron Gilchrist a private operator a keen advocate of vermiculture has utilised paper with worms to produce rich loam.

Alternatives

Other alternatives include incineration, production of paper bricks for domestic fires etc.

Aluminium Can Recycling

The use of aluminium in the production of drinks containers has for some years been under pressure from thin walled steel containers. However Alcan advise that in recent times that 72% of soft drinks are now sold in aluminium cans and that 58% of canned beer use aluminium. Overall Alcan estimate that on average every person produces 81 Aluminium cans per year. Many of these are drunk away from home and the domestic waste stream is predicted to contain 1 can per head per week. Assuming each can weighs 15.5g the estimated annual return from these cans is:-

| <i>N^o. People</i> | <i>N^o. Weeks</i> | <i>No. Cans</i> | <i>Tonnage</i> | <i>@ £500 / T</i> |
|------------------------------|-----------------------------|-----------------|----------------|-------------------|
| 6,000 | 52 | 312,000 | | |
| 15,000 | 17 | 255,000 | | |
| | | 567,000 | 8.9 | £4,450 |

Currently ARCO, although enthusiastic to collect cans have found it to be a dirty and unpleasant task and as they are only receiving an income of between £37.07 and £48.13 per annum they are also considering abandoning this scheme. Although contributing very little to the actual impact on the landfill, the recycling of aluminium cans is one of the most well known recycling schemes. If a more effective scheme was in operation supported as part of a broader initiative it may be worth pursuing.

Composting

With the relatively high composition of biodegradable material, composting is often considered as one of the most likely methods of diverting material from the waste stream and has recently received more widespread attention with the provisions outlined in the Landfill Directive.

Relatively few large scale composting plants operated by local councils in Scotland yet exist.

Dundee City Council are well known for their composting of green waste which is sold as a fertilizer and Aberdeenshire are currently investing in in-vessel treatment and intend to use the final product as landfill cover and for remediation/landscaping of old landfill sites. Dundee's operation is estimated to cost around £17 per tonne but the process also produces up to 60% waste product which cannot be used or sold as fertilizer material and requires to be landfilled.

The costs for Arran of a central composting plant should be assessed, including collection, transport and the possible end markets on the island.

Small Scale Composting

Many community groups throughout the Highlands & Islands operate trial schemes including:-

- *Skye & Lochalsh Agenda 21 Group*
- *Shetland Amenity Trust*
- *Lochaber Environmental Group*

A trial scheme run by **Skye and Lochalsh District Council** in Glendale and Plocton using the green cone found the cones required significant commitment, could remove significant proportions of waste but did not reduce the costs of waste collection and disposal.

Golspie Vermiculture Project, develops the techniques used in Golspie mill and is trialling them in Dunrobin Castle (tourist attraction) and Golspie High School.



Linpac Composter

- *Kinlochleven Village Garden Project*
- *Various projects through WHAM*

Various schemes have been trialed and details of the barriers, costs and successes are available. Many techniques exist from the relatively technical solution suggested by Ron Gilchrist (a well known vermiculture advocate), to more simple solutions.

Organics

Home/Community composting would appear to offer a very plausible solution for this material. **Strathspey Waste Action Network recently** undertook a home composting scheme in which around 50 households, schools and businesses volunteered to take part in the two year trials to find out which home composting units are most effective.

SWAN estimate that in Strathspey each household can divert approximately 166kg per year of kitchen waste. This figure is higher if green waste is also included. *See Appendix 1*

A launch day was held and volunteers invited to join programme free. The programme proved highly successful, with individuals, highly satisfied to be helping reduce the problem of municipal waste and reporting that it now ‘feels wrong’ to put organics in the wheelie bin ! The 82 units were financed from grant of £3000.

South Ayrshire Council (Gillian Adams)

South Ayrshire are currently extending their initial home composting trial programme from 100 homes to 10,000 (although they only expect a response rate of 15%-20%) Funds have been obtained from

- existing Waste Management budget and
- through landfill avoidance costs. (They seek to quantify waste avoidance costs).

The programme has been arranged with **Linpac** who are sending out the leaflets, organising responses and delivering the composters at a unit cost to the council of £15 (approx £5 saving due to bulk order). Customers are required to also contribute £5 for the composter. The Linpac Composter unit was chosen partly because of its success in first trial but also due to the competitive deal with **Linpac**. (*see Appendix 2*)

The following table summaries some recent estimates of compostibles diverted by home composting schemes:-

| Organisation | Estimate of Compostibles Diverted (Kg/yr) |
|---------------------------------|--|
| Argyll and Bute Council | 300 |
| South Ayrshire Council | 275 |
| Strathspey Waste Action Network | 166 (excluding green waste) |

Table 8. Estimate of Diversion of Compostibles

Assuming that 50% of the 2663 permanent homes on Arran were to compost 275kg per year – it would result in approx 1831m³ of waste avoided – extending the life of the landfill by around 3years, at a cost of £30,000 if each unit costs £15.

Over a three year period, even the shipping costs alone (£12/tonne) to transport an annual tonnage of 1874T to the mainland would cost £67,464. Entrust (Jim Graham) advises that if organised by a community group, landfill tax credits could be used to support home composting on Arran. It may strengthen the bid if it is presented as a pilot project.

| |
|--|
| $275\text{kg} \times 2663 \times 0.5 = 366\text{T} = 1831\text{m}^3/\text{yr}.$ $\therefore \text{annual vol of } 9371 \text{ reduces to } 7540\text{m}^3$ |
|--|

Other Materials

A number of other materials exist within the waste stream which it may be possible to recover, and include aluminium, textiles, furniture, serviceable/repairable household items and wood wastes.

There are a variety of projects which have successfully targeted collection of furniture for reuse. Some of these like Glasgow's 2nd *Opportunities*, Dundee's *Tayside Furniture Project* and the *Moray Furniture Store* collect items for reallocation to low income households often referred by social service agencies. Other projects such as *Tayside Recyclers* and *Lochaber Environmental Group* collect items for re-sale or re distribution in the community. A number of areas including Dundee and Shetland also have *Creative Resource Centres* (scrapstores) which take a variety of household items and if necessary repair prior to resale. Arran used to hold furniture and other items in a warehouse which was made available to the public but it has been suggested this was not completely successful due to its location and sometimes condition of goods. A more formal arrangement may also be able to remove volume from the waste stream.

Although not yet quantified an initial review suggests there is a reasonable amount of wood waste which is taken to landfill – it may be appropriate to consider alternatives to landfilling these wastes such as chipping to produce a bark medium.

Agriculture

The disposal of agricultural wastes, particularly of animal by-products is under review and these changes in the regulations require to be monitored for their impact on the processing of waste on the island. There are also waste minimisation programmes for farms– leading to Environmental Opportunities in Agriculture being supported by SEPA see (<http://www.sepa.org.uk/wastemin/projects/east004.htm>) . This is also related to *Section 3.4* of this report.

One recent initiative on the island considered Farm Plastics and was administered by Penny Hamilton as Co-ordinator.

The Royal Scottish Benevolent Institute (of the National Union of Farmers), have a project to collect farm plastic waste and transport it to the *Dumfries Plastic Recycling Co.* (who produce plastic lumber). Farmers require to pay a subscription of £50 per year to the scheme. Plastic to be collected in large sacks (approx a ton each). Min transport load set at 10 tons.

There are approx 60 farmers on island (40 members of NFU). However partly due to poor publicity of the scheme only two farmers ultimately joined.

Difficulties

- However despite the fact that farmers probably pay more than £50/yr in disposal costs for plastics, the scheme has been slow to attract interest.
- Also finding transport difficult as plastics are a high volume but low bulk and weight item – no support from CalMac.

Currently the scheme is on hold and the two farmers who did join the scheme have had their money returned.

West of Scotland Water

Jim Arnott – WOSWA Process Advisor for Waste Water Treatment, has advised that although they will be building 3 or 4 sewage treatment works in the main conurbations, the type of treatment plant has not yet been decided as this will be dependant on the final outlet for the treated waste. Potential outlets include:

- Limited treatment, as sludge shipped to the mainland for treatment.
- Spreading of limed sludge for use as an agricultural fertilizer.
- Disposal of sludge cake to landfill
- Use of treated sludge as fertilizer for coppicing for Border Bio fuels electricity generation.
- A Vermiculture solution to the slurry problem which could potentially be mixed with food waste, paper/cardboard.

They are therefore very interested in working in partnership with NAC, the various agencies and the local community to help identify potential outlets/markets for the sludge residues. Their target dates for a decision on the treatment plant is for no later than Easter 2001 which fits with the deadline for submission of a bid to the Special Transitional Programme.

3.3. Company Visits

Between the 6th and 8th of June a number of company visits were arranged on Arran in order to :-

1. Undertake a consultation exercise with local business and interested community groups, to both promote and gather support for the proposed strategy.
2. Seek to establish if sufficient interest exists to develop a waste minimisation forum, for local industry on the island.

Table 9. Organisations Contacted

| | | |
|-------------------------------------|----------------------------|------------------|
| Arran Council for Voluntary Service | Arran Estates | Arran Provisions |
| Auchrannie Hotel | Brodick Primary School | Co-op |
| Island Cheese Company | Isle of Arran Distillers | Lamlash High |
| MSD Sand & Gravel | Scottish National Heritage | Tormore Quarry |
| Torrylin Creamery | | |

From this consultation exercise it clearly emerged that there exists a significant level of environmental awareness among the organisations contacted, an appreciation of some of the disposal issues related to the landfill and hence the need for enhanced recycling and resource use. That a waste management strategy was being developed was also strongly welcomed and given that business individuals are also members of the community the necessity for an integrated approach to dealing with the issues was considered to be the most appropriate approach.

The relationship with tourism was important to many businesses both as a direct issue of increased waste with which the businesses had to contend but also the importance of being able to portray Arran as a 'Green Tourist Destination'. The business community was also in favour of direct assistance to aid them with the waste minimisation and energy efficiency aspects of their operations. (*See Appendix 3*)

Not for Profit Organisations

The majority of organisations offered no direct suggestions although the *Scottish National Heritage* representative (who is also a member of the Arran Recycling Company) expressed preference for the 'ideal' scenario in which recycled goods are segregated at source and processed by a central recycling facility which also provides a centralised composting facility.

The *Arran Council for Voluntary Services* (ACVS) were particularly enthusiastic to support the development of an integrated strategy and have provided a comprehensive list of contacts. (*See Appendix.4*). They previously operated a second hand furniture centre near their offices in Lamlash. This ultimately failed for a variety of reasons such as poor location, only one individual available part time to control goods accepted, revisions in the Trading Standards meant the rejection of electrical equipment as well as significant quantities of furniture due to toxic content and so on. They consider that there is the need for a such a facility and would be willing to support any venture. The primary components for success however are likely to include appropriate accommodation and financial assistance for staffing.

The ACVS offered to organise and co-ordinate a brainstorming/focus group to consider the establishment of a furniture store but also to consider waste and recycling in general.

Schools

Both Brodick Primary school and Lamlash High, have previously been involved in recycling projects and are keen to work with other organisations to develop sustainable solutions. Lamlash for instance had developed some interesting products such as utilising waste paper to make briquettes which a local garden store agreed to sell and melting aluminium cans into ingots and tourist novelty items.

Eco Village

Robert Hanna of Meadowland Trust has a house in Corrie and the Trust own land at Corricravie on which they intend to demonstrate the benefits of ECO Sound land management processes. Previous work by the Trust include being employed by British Airways in an advisory capacity during the erection of their Headquarters adjacent to the M25, the M74 extension and the extension of Manchester Airport.

The Trust believe that Arran would easily lend itself to "eco farming/lifestyles" that the Island and should aim to position itself as the first Eco/Organic Island and that there would be significant spin off benefits to tourism farming etc. No formal dialogue has yet been established but Tom Millar of Argyll and Islands Enterprise is seeking to establish contact as there may be some relation with these plans and the Potential Waste Minimisation Forum on Arran.

3.4. Potential Waste Minimisation Forum on Arran

Driven in part by the response by business on the island to the consultation exercise, beginning in July regular meetings have been held with the interested agencies to consider how to support the development of an integrated strategy support that can be offered to local businesses.

Given the way in which various organisations have defined their spheres of influence, Arran is under the jurisdiction of a unique mix of agencies which may ultimately allow access to a greater range of resources than might otherwise be available. Although with North Ayrshire Council as the Local Authority yet the Enterprise agencies are Highlands and Islands Enterprise (and Argyll and Islands) in the North and for SEPA it is waste Strategy area No 9 (which extends to Dumfries and Galloway in the South).

Currently Involved

| Agency | Individuals Involved |
|----------------------------------|--|
| Highlands and islands Enterprise | Neil Downie – <i>Env Business Manager supporting SME's</i> |
| Argyll and Islands Enterprise | Tom Millar – <i>Business Advisor</i> |
| Argyll and Arran Tourist Board | Irene Currie – <i>Area Manager</i> |
| Energy Agency South Ayrshire | Liz Marquis - <i>Director</i> |
| West of Scotland Water | George Yair – <i>Customer Contact Team Leader</i> |
| SEPA | Yvonne Irvine, Stephen Flood, Gillian Bruce - <i>seconded to SEPA P/T. Runs East of Scotland Water's highly successful Waste Min Prog</i> |

Table 10. Agencies Involved in potential Waste/Env Forum

The main outcome of the discussions so far has been the view that a broad environmental programme that seeks to present Arran as an environmentally friendly island destination – A '**Green** Scotland in Miniature' could provide significant development opportunities for the islands economy. Indeed, given the range of agencies and organisations actively involved it could potentially even serve as a model which could be adopted elsewhere in Scotland.

Structure and Funding

Given the desire by all concerned to take practical steps, which also establish credibility, two distinct activities supporting business that can be readily undertaken utilising existing funding sources are :-

- **Energy audits** – for large companies these can be conducted by the *Scottish Executive, Energy Efficiency Office*. Audits for smaller companies may be conducted by the *Energy Agency*.
- **Waste Audits.** – The Environmental Technology Best Practice Programme is able to support waste audits even for small firms.

Within this overarching ‘Green Arran’ programme, these first steps for business, could be linked to action by North Ayrshire Council for domestic waste. However, the further development and promotion of the ‘Green Arran’ programme will inevitably require a funded post to drive forward the various initiatives. *West of Scotland Water* are currently considering a part time post for an individual to provide customer advice on environmental matters and would see the type of environmental programme envisaged here as an ideal vehicle for this effort. (George Yair is currently discussing the proposal with Ernie Chambers). Top up funding to make this a full time post requires to be explored i.e. NAC Landfill tax credits and *Argyll and Islands Enterprise* etc.

In the longer term it is considered that the individual in post would help define and prepare a submission to the Highland and Islands Special Transitional Programme. As noted by *Highlands and Islands Enterprise*, this unique model being proposed for Arran would be very likely to attract interest from other island communities in the European Union and as such would provide a very strong case for funding.

Challenges

- Ensuring that all the various interested organisations work efficiently together. It may be necessary to develop a specific steering group ratified with a constitution.
- Define the scope, objective and title of the project- i.e should Arran be seeking the internationally recognised Green Globe Award for Tourism ?
- Ensure all other relevant organisations involved, Education Dept, Planning Dept (e.g. encouraged to act in favour of developments that consider the environment).
- Recruiting the correct individual for this task. It is the view of agencies so far involved that this should be an experienced individual who lives on the island and who will be able to work effectively across all sectors.
- A line manager would need to be nominated to work with the recruited individual.
- If the majority of funding does come from one agency (i.e WOSWA) then their requirements are inevitably likely to precedence.

There is no doubt that this is an ambitious project which faces a number of difficulties. However there is strong support from both business and the community sectors who recognise the importance of an integrated and inclusive approach and in some cases are already frustrated such an approach does not already exist.

Acting in concert with North Ayrshire Council this initiative is likely to add significant weight to any funding proposal for the development of an integrated approach to waste management on the island.

3.5. Customer Survey

The recent North Ayrshire Cleansing Services – Customer Survey of Arran included the question:-

As an island community it is important to find sustainable solutions to your waste. Would you be prepared to participate in recycling initiatives such as

- *Home composting (if provided with a bin) ?*

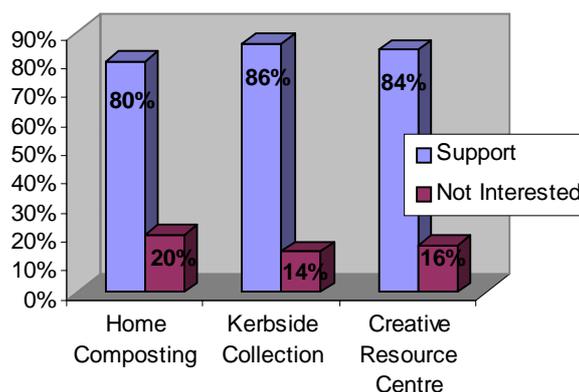


Figure 3. NAC Customer Survey

- *An additional but separate kerbside collection of recyclable waste ?*
- *A clean and friendly local centre which repairs and sells second-hand household items ?*

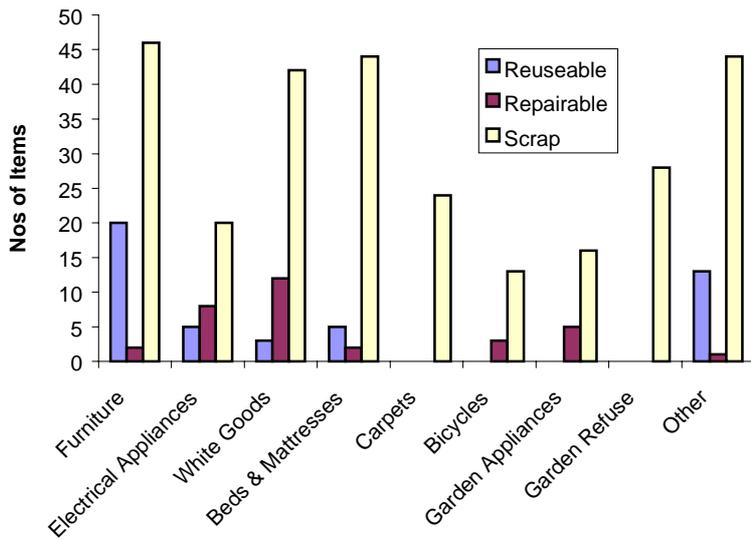
Although only 155 survey forms were returned the results indicated that there is strong support from householders for recycling initiatives. (See **Appendix 5**)

3.6. Survey of Bulky Domestic Waste

The special uplift of bulky wastes operates seven days a week in summer and five days a week for the rest of the year. NAC records show that throughout April to July this year that an average of 188 special lifts were made per month (i.e 6 per day). In order to obtain an estimate of the contribution of bulky uplifts to the waste stream and to estimate the quality of items collected for potential resale in a *Creative Resource Centre* a survey of bulky items collected by special uplift was undertaken over a period of 43 days between 12th June and 5th September 2000. (Shaded boxes represent those days on which records were taken) - See **Appendix 5** for an example of a completed form.

| | June | | | | July | | | | | August | | | | Sept | | | | |
|------------------|------|----|----|----|------|---|----|----|----|--------|----|---|----|------|----|----|---|----|
| Monday | | 5 | 12 | 19 | 26 | | 3 | 10 | 17 | 24 | 31 | | 7 | 14 | 21 | 28 | 4 | |
| Tuesday | | 6 | 13 | 20 | 27 | 4 | 11 | 18 | 25 | | | 1 | 8 | 15 | 22 | 29 | 5 | |
| Wednesday | | 7 | 14 | 21 | 28 | 5 | 12 | 19 | 26 | | | 2 | 9 | 16 | 23 | 30 | 6 | |
| Thursday | 1 | 8 | 15 | 22 | 29 | 6 | 13 | 20 | 27 | | | 3 | 10 | 17 | 24 | 31 | 7 | |
| Friday | 2 | 9 | 16 | 23 | 30 | 7 | 14 | 21 | 28 | | | 4 | 11 | 18 | 25 | | 1 | 8 |
| Saturday | 3 | 10 | 17 | 24 | | 1 | 8 | 15 | 22 | 29 | | 5 | 12 | 19 | 26 | | 2 | 9 |
| Sunday | 4 | 11 | 18 | 25 | | 2 | 9 | 16 | 23 | 30 | | 6 | 13 | 20 | 27 | | 3 | 10 |

The survey indicates that 9m³ (1.8 tonnes) of material is collected on a daily basis although it was noted that the vehicle would make several trips a day to the landfill and so the exact volumes are uncertain. On the basis of these figures a conservative estimate for the annual quantity of waste collected by this method is 504T.



The quality of items collected would appear to be relatively low with the majority of items deemed to only be fit for scrap. However a number of factors are likely to have influenced this result, such as the assessment by the drivers and the care taken by householders who were discarding their items. However given the result from the NAC survey in

Figure 4. Results of Survey of Bulky Items Collected by Special uplift

which 84% of those who responded indicated support for a Creative resource Centre a more detailed analysis would be necessary to fully establish the extent and quality of items which could potentially be collected for resale.

4. Funding

4.1. European Sources

The Highlands and Islands Objective 1 Programme was formally adopted by the European Commission in 1994 and provided £240 million of European Community support to the area up until the end of 1999. This has been replaced by the **European Structural Funds Special Program for the Highlands and Islands 2000 – 2006** which was approved in principle by the European Council in March 1999. The programme has an overall fund of £200 million.

Priorities For Action

Building on the momentum created by the Objective 1 Programme, the Plan activities are grouped under three **Priorities**, which will individually and in combination contribute to achievement of the Strategic Aim and Objectives:

- **Priority 1** – Increasing Business Competitiveness, Creating Employment And Increasing Incomes
- **Priority 2** - Creating The Conditions For Regional Competitiveness
- **Priority 3** – Developing the regions Human Resources
- **Priority 4** - Rural Development and Fisheries

Within each of these main priorities, specific measures have been identified.

The plan also undertook a ‘swot’ analysis of individual regions with a scoring given based on

- Development Need and
- Need for Development Support.

However only in the assessment of proposals under specific measures, will the area score become relevant. (See Also **Appendix 7**)

| REGIONAL PRIORITY RATING | | |
|--------------------------|-------|--------|
| Very High | High | Medium |
| 2 - 3 | 4 - 5 | > 6 |

Table 11. Regional Priority Rating

Arran

Projects are expected to be submitted identifying the main priority and measure under which they are relevant. For Arran, initially a project considering waste management on the island which has the potential to provide some jobs through recycling is likely to fall under

Priority 2: Creating the Conditions for Regional Competitiveness
Measure 2.4: Waste Management, Water and Sewerage Provision and Pollution Control

Arran obtains an overall regional ‘high priority’ rating of 4.

Brindly Consultants – Arran European Funding Priorities – Nov 1998

The study conducted by Brindly Consultants, identified that Arran under Objective 1 did not obtain grants commensurate with the Highlands and Islands allocation. It did however identify that “*Arran is by no means the most disadvantaged part of the Highlands and Islands, although it does have the natural disadvantages of a small island community and a fragile economy and with a co-ordinated effort should expect to do better in the next Objective 1 Programme.*” Following a broad consultation period and workshop with local business/relevant bodies, six strategic aspirations for Arran were identified.

1. Widen the Islands employment base and provide more jobs in the winter months.
2. Broaden the Islands tourist market and extend the season.
3. Provide for skills development and life long learning on Arran.

4. Improve and integrate the Islands transport systems.
5. Sustain Arran's primary sector.
6. Sustain and protect Arran's natural environment.

This last strategic aim included the requirement to "develop waste minimisation/recycling to reduce landfill"

Conclusion on Objective 1 Funding

Although the Brindly report did highlight that Arran is not as economically weak as other areas and that special geographic targeting should not be assumed - the final submission to the Highlands & Islands Special Transitional Programme does provide Arran with a relatively high geographical score.

A significant amount of money will be available under this programme and Argyll and Islands Enterprise would welcome outline bids as soon as possible as it would assist them in bidding for the EU funds. However there are a significant number of waste management projects on islands previously funded under Objective 1 although none so far Arran. The implications and details of the existing projects should be carefully considered in preparation of a bid for Arran. Discussion with *Linda Aird* and the *Highlands and Islands Partnership Programme*, also indicate that :-

1. The £200 million is confirmed available for the Highlands and Islands
2. The EU is seeking a clear final legacy from this last programme. i.e perhaps not lots of little projects.

The implications are that the types of projects likely to be suitable on Arran are equally likely to be applicable on many of the islands. Many of the existing community groups have indicated outline interest in an umbrella project but this will have to be explored further with the individual local authorities and businesses.

Other potential funding opportunities are likely to arise such as LEADER III and LIFE together with possible government programmes such as Challenge funding.

4.2. Enterprise Network

Argyll and Islands Enterprise would expect to be able to provide financial support through the existing LEC network. The agency have so far expressed enthusiasm for glass recycling and composting projects.

5. Conclusions

The principal issues which have arisen during the development of the Arran Waste strategy are set out below:

1. **There is a significant level of interest** in all sectors throughout the island from business to voluntary, in an integrated strategy. However it requires to first of all engage and include the islanders to ensure their support and be able to demonstrate that it is a considered and integrated strategy.
2. **Under the principles of sustainability and proximity** a variety of local solutions to various waste streams can be seriously considered. These could include :-
 - *Extending the glass collection scheme through the use of additional bottle banks in more public locations and perhaps arrangements with the larger hotels such as the Auchrannie for the collection of their glass.*
 - *Establishing home composting schemes*
 - *Chipping wood wastes*These operations could be potentially conducted without necessarily putting anyone in post. However a broader programme which includes refurbishing and reselling bulky items, recycling aluminium etc is more likely to require at least a part time funded post.
3. **There is strong potential for a broad environmental programme** that incorporates waste management issues. This is supported by :-
 - *the results of the Brindley Report on the strategic aspirations for the island,*
 - *from the business and householder surveys conducted during the preparation for this report*
 - *the recent meetings with the various interested agencies has initiated an ongoing programme to assess the potential for this and a public meeting is being proposed for early January 2001.*It is likely that the interested agencies perhaps with North Ayrshire Council will be able to access some funds to support an individual for perhaps two days a week to progress this initiative.
4. **More detailed waste analyses of volumes and arisings** – Given the uncertainty of the actual waste arising a more detailed analysis of the waste could be undertaken i.e checking the actual tonnage of material in each of the loads delivered over a period of say one to two weeks and comparing this with the estimates from the cubic capacity of the vehicles. A more detailed check of the bulky uplift items should also be conducted.
5. **Funding.** One possible mechanism for supporting a sustainable waste strategy for Arran is through the **Highlands & Islands Special Transitional Programme 2000-2006**. Under the scheme, Arran would be likely to be eligible for funding for projects complying under Measure 2.4 The Scottish executive also announced in October that through a **Strategic Waste Fund** that £56 million will be made available to support local authorities in the implementation of the National Waste Strategy.

Appendix 1
**Strathspey Waste Action Network – Adopt a
Composter Project - Summary**

Strathspey Waste Action Network

Finding local solutions for local waste

The SWAN 'Adopt-A-Composter' Project - A Summary

The Project

The 'Adopt-A-Composter' project was a pilot initiative to find out how successful home composting is in the Badenoch & Strathspey area, with its relatively harsh climate:• . . .

Over 100 composting units of 15 different types were provided to 82 households~ eip3n businesses and five schools.

SWAN members provided free advice, support, and the services of a trouble-shooting 'Compost Doctor' to all compost volunteers.

The project was financed by a g~ of £3000 from. Waste-Highland Action on Minimisation.

The Results

- 87% of households provided with composters were composting at least 90% of their organic waste.
- 97% of those involved were satisfied with their composter and 65% were very satisfied. Only one volunteer gave up composting.
- An average of 3.2kg of kitchen waste per household per week was diverted from landfill through the project, along with substantial amounts of garden waste.
- Of the types of composters tested the Rotol appeared to be the best bin for our district, where ability to gather and hold heat, and to resist wind are very important.
- Home composting can offer substantial savings in waste disposal costs.
- Support *for* compost volunteers contributed to the success of the project.

Conclusion

The project has shown that providing households, businesses and schools in Badenoch and Strathspey with appropriate composting units and back-up support results in successful home composting, leading to significant economic, educational and environmental benefits.

The Next Step

- SWAN is seeking new funding to expand home composting to cover all of Badenoch & Strathspey.

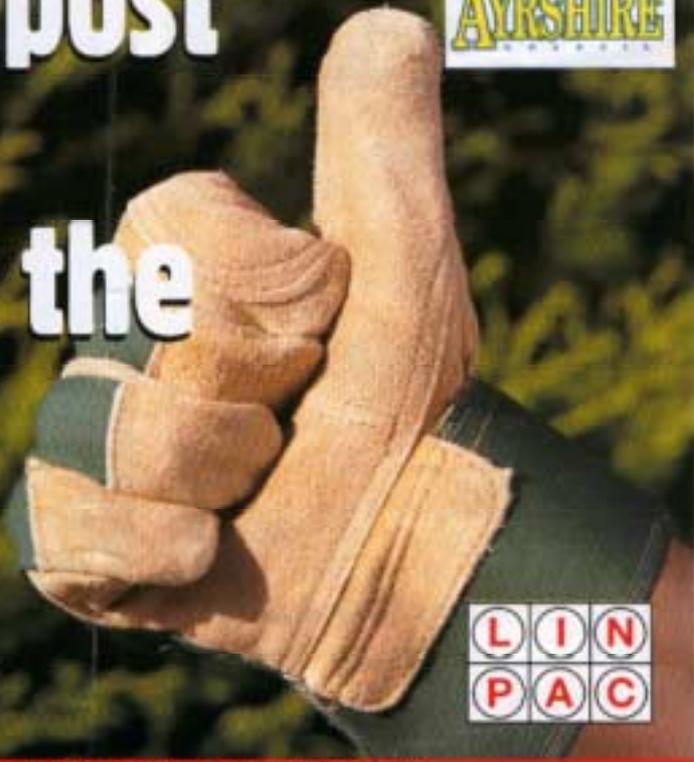
SWAN is a voluntary community group concerned with all aspects of waste minimisation. SWAN is registered with ENTRUST.

Appendix 2
South Ayrshire Council – Home composting Leaflet

Buy a compost bin and it won't cost the earth!

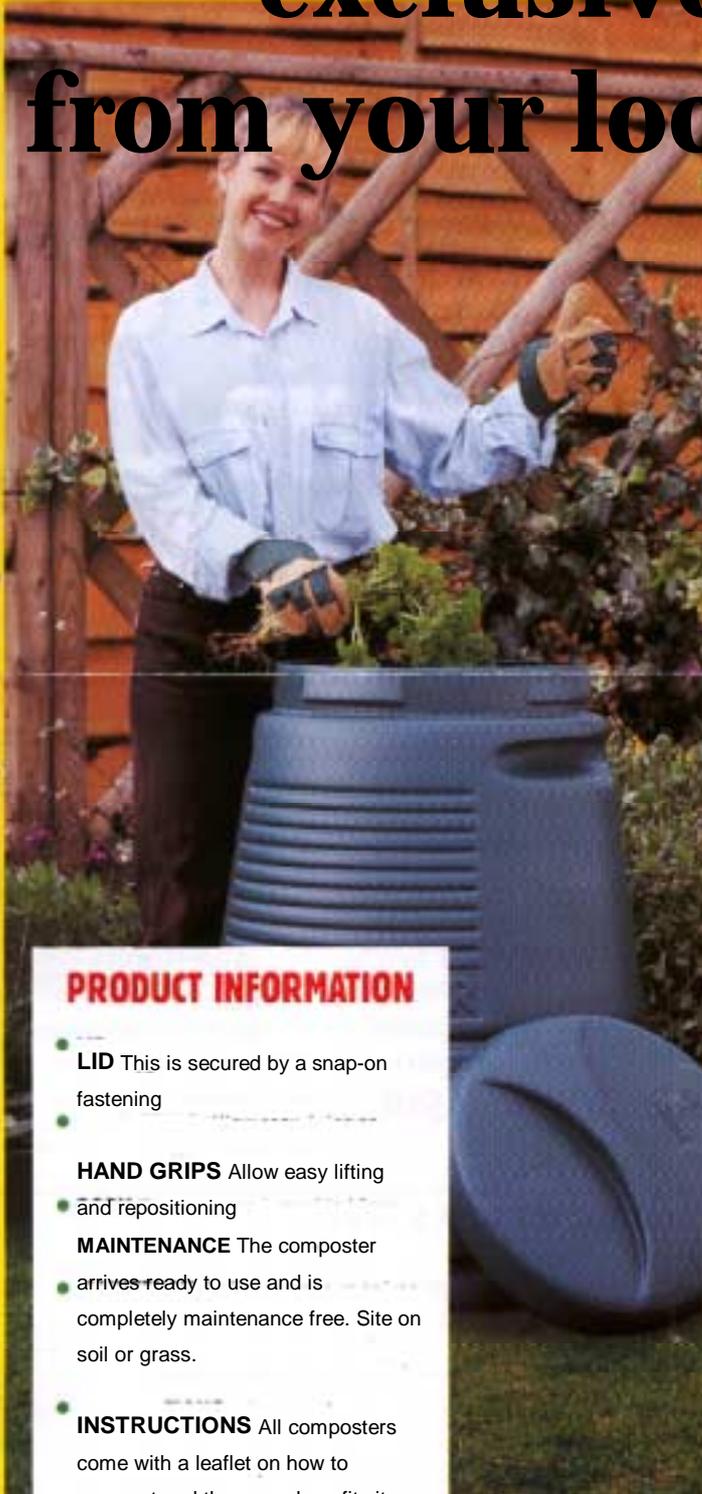


**ONLY
£5.00**
INC. DELIVERY
(RETAIL PRICE £39.95)

A small inset image shows a blue and grey compost bin sitting on a lawn. The bin is cylindrical with a grey base and a blue top section. It has a handle on the side.

ORDER YOUR LIMPAC HOME COMPOSTER TODAY

Take advantage of this exclusive offer from your local council.



PRODUCT INFORMATION

- **LID** This is secured by a snap-on fastening
- **HAND GRIPS** Allow easy lifting and repositioning
- **MAINTENANCE** The composter arrives ready to use and is completely maintenance free. Site on soil or grass.
- **INSTRUCTIONS** All composters come with a leaflet on how to compost and the many benefits it brings.



BODY Strong, rugged, moulded from 95% recycled plastic bottles.

YOU CAN HAVE A HAND IN PRESERVING THE ENVIRONMENT

By ordering your LINPAC home composter you have the opportunity to help save the planet and improve your garden in the process.

LINPAC in partnership with your local council can help you do your bit for the environment by offering you a home composter at far less than the retail price.

WITH A HOME COM POSTER

So don't delay, order your composter now!

To arrange for home deLivery, order by phone on our Credit Card Hotline, or fill in the form on the back of this leaflet, and your composter will be delivered direct to your home within 28 days.

Appendix 3

Organisations Contacted

| Organisation | Summary Comments |
|--|--|
| <i>Arran Council for Voluntary Service</i> | <ul style="list-style-type: none"> • Previously ran second hand goods centre. Failed due to poor location, Only one individual avail part time to control goods accepted, Trading Standards meant reject much electrical equip and furniture due to toxic content. • Could organise brainstorming/focus group. |
| <i>Arran Estates</i> | <ul style="list-style-type: none"> • Keen to lease additional land in gully at existing landfill site to extend life. • Found paper as animal bedding inefficient as it clogged hooves |
| <i>Arran Provisions</i> | <ul style="list-style-type: none"> • Keen to improve energy efficiency and interested in waste minimisation. |
| <i>Auchrannie Hotel</i> | <ul style="list-style-type: none"> • Plans for community visitor centre £4million. Probs with land owner • Keen to support recycling initiatives – particularly interested in link with tourism. • Large quantities of glass and food wastes produced |
| <i>Brodick Primary School</i> | <ul style="list-style-type: none"> • Have had recycling schemes but some have fallen through, would be keen to work in concert with other organisations |
| <i>Co-op</i> | <ul style="list-style-type: none"> • 10 bales cardboard/wk internal return to Cumbernauld • Wooden pallets returned |
| <i>Island Cheese Company</i> | <ul style="list-style-type: none"> • Many businesses find large volumes of cardboard a problem. Ian doesn't accept cheese with cardboard containers now but still faced with end runs. • Too few locations for glass recycling. |
| <i>Isle of Arran Distillers</i> | <ul style="list-style-type: none"> • Malted barley wastes from stills – given free to farmers who pay for transport- used as a cattle feed. • Some cardboard wastes – would consider small scale incinerator • Some food wastes from restaurant |
| <i>Lamlash High</i> | <ul style="list-style-type: none"> • Have had projects to produce paper briquetts - local shops agreed to sell (product OK but due to small class Nos – project fell thru). • Also project to melt Al to produce gifts |
| <i>MSD Sand & Gravel</i> | <ul style="list-style-type: none"> • 2 loads /month return empty- seek return loads. • Old builders sacks – main waste (degrade in light) |
| <i>Scottish National Heritage</i> | <p>Ideal Strategy would include:-</p> <ul style="list-style-type: none"> • Central Composting • All recyclables collected – segregated at source • Glass, Plastic, Al, Ferrous, Paper Card, Organic |
| <i>Tormore Quarry</i> | <ul style="list-style-type: none"> • Min waste – main issue empty back loads, although doing some work for roads dept. |
| <i>Torrylin Creamery</i> | <ul style="list-style-type: none"> • Whey is the main waste – previously sold to a pig farm, now discharged direct to sea. • Small qty paper, plastic, clothes wastes |

Appendix 4

Arran Council for Voluntary Service – Contact List



6. ARRAN~ FOCUS

Lamlash Community Centre

Thursday, 16th May, 1996

Conference REPORT

*Comments or enquiries relating to this report should be forwarded to:
Jan Schofield, Organiser, Arran Council for Voluntary Service
Park Terrace, Lamlash, Isle of Arran, KA27 8NB
Telephone/Fax: 01770 600611
e.mail: scvoarran@cali.co.uk*

Development of a Sustainable Waste Management Strategy for **the** **Isle of Arran**

-

6.1. CONTACTS

7. TO: Colin Murchison, Centre for Waste Management

Lynn Ross

(Chair Argyll & the Islands Enterprise-Arran Group) Tel:01770 302996

Lavinia Gibbs

(Arran Civic Trust)

Tel:01770 840229

Alistair Clark

(Arran Access Trust)

Tel:01770 600104

Don Mcleish, Ship field Lamlash

Tel:01770 600538

Jill Hargan, Denard, Brodick

Tel:01770 302475

Janice Gemmell, Coig, Alma. Brodick

Tel:01770 302895

Sheila Johnston Chair, Arran Community Council

Tel:01770 600247(work)

Sheila Rees, Heddfan, Glenashdale Whiting Bay

Tel:01770 700472

Tony Wall (Chair, Elderly Forum for Arran)

Tel:01770 600037

Dr Malcolm Kerr

Tel:01770 302175

Pete Ryan

Tel:01770 700641

Terry Crawley (Secretary, Arran Community Council)

Tel 01770 830305

ISLE OF ARRAN

LIST OF VILLAGE HALLS AND IMPROVEMENT COMMITTEES

Blackwaterfoot Improvements Committee

Vic Iutz

Harbour House

Blackwaterfoot

Telephone No 860215

Brodick Improvements Committee

Stewart Walls

The Pharmacy

Brodick

Telephone No 302250

Corrie and Sannox Improvements Committee

Fay Reid

Greenbank

Corrie

Telephone No 810232

Corrie and Sannox Village Hall

Margo Wheeler

Springwell

Corrie

Telephone No 810617

Kildonan Improvements Committee

Tom Miller

Auchenhew House

Kildonan

Telephone No 820243

Kildonan Village Hall

Steve Kelly

Ailsa View

Kildonan

Telephone No 820293

Kilmory Public Hall

Main Duff

12 Torrylinn Terrace

Kilmory

Telephone No 870305

Lamlash Community Centre

Sandy McQueen

Culag

Lamlash

Telephone No 600281

Lochranza Improvements Committee

Bill Scott

Ornsay

Lochranza

Telephone No 830304

Lochranza Village Hall

Joyce MacLean

Knochenloch

Lochranza

Telephone No 830227

Machrie Village Hall
Mike Lunan
Achabhealaidh
Macbrie
Telephone No 840201

Pimmill Improvements
Campbell Laing
Woodside
Pirnmill
Telephone No 850216

Pimmill Community Centre
Chris Black
Seahoim Cottage
Pirnmill
Telephone No 850263

Shiskine Village Hall
Sheila Johnston
Lynnhurst
Shiskine
Telephone No 860403

Whiting Bay Improvements Committee
Liz Kennedy
Burnbrae
Whiting Bay
Telephone No 700552

Whiting Bay Hall
Julie Nelson
Shore Road
Whiting Bay
Telephone No 700405

Appendix 5

North Ayrshire Customer Survey

Community Survey



1. Were you previously aware of all the services the cleansing department have to offer ? *Yes* *No*
2. Would you describe the refuse collection team as :- *Courteous/Polite* *Helpful* *Unhelpful*
3. Does your street have a litter problem *Yes* *No*
4. If there is a litter problem, is it caused by the existing bag collection system. *Yes* *No*
5. Would you prefer to change from the existing bag collection to a new wheeled bin system
Yes *No* *Don't Mind*
6. How often do you utilize the existing Special uplifts – household bulky items collection service.
More than once a month. **Every other month** **Once a year** **Never**
7. Do you utilise the garden refuse collection service.
8. How often do you utilise the existing glass recycling banks?
More than once a month. **Every other month** **Once a year** **Never**
9. As an island community it is important to find sustainable solutions for our waste. Would you be prepared to participate in recycling initiatives such as:-

| <u>interested</u> | <u>Strongly support</u> | <u>Support</u> | <u>Not</u> |
|---|--------------------------|--------------------------|--------------------------|
| a) Home composting (if provided with compost bin and advice) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| b) An additional but separate kerbside collection of recyclable materials | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| c) A clean & friendly local Centre (i.e like a jumble sale or second hand shop) which repairs (as necessary) and sells (cheaply) second hand household items. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

If you have any other comments on the Cleansing Service please list them below

Appendix 6

Example of Completed Survey Form of Bulky items Collected by Special Uplift