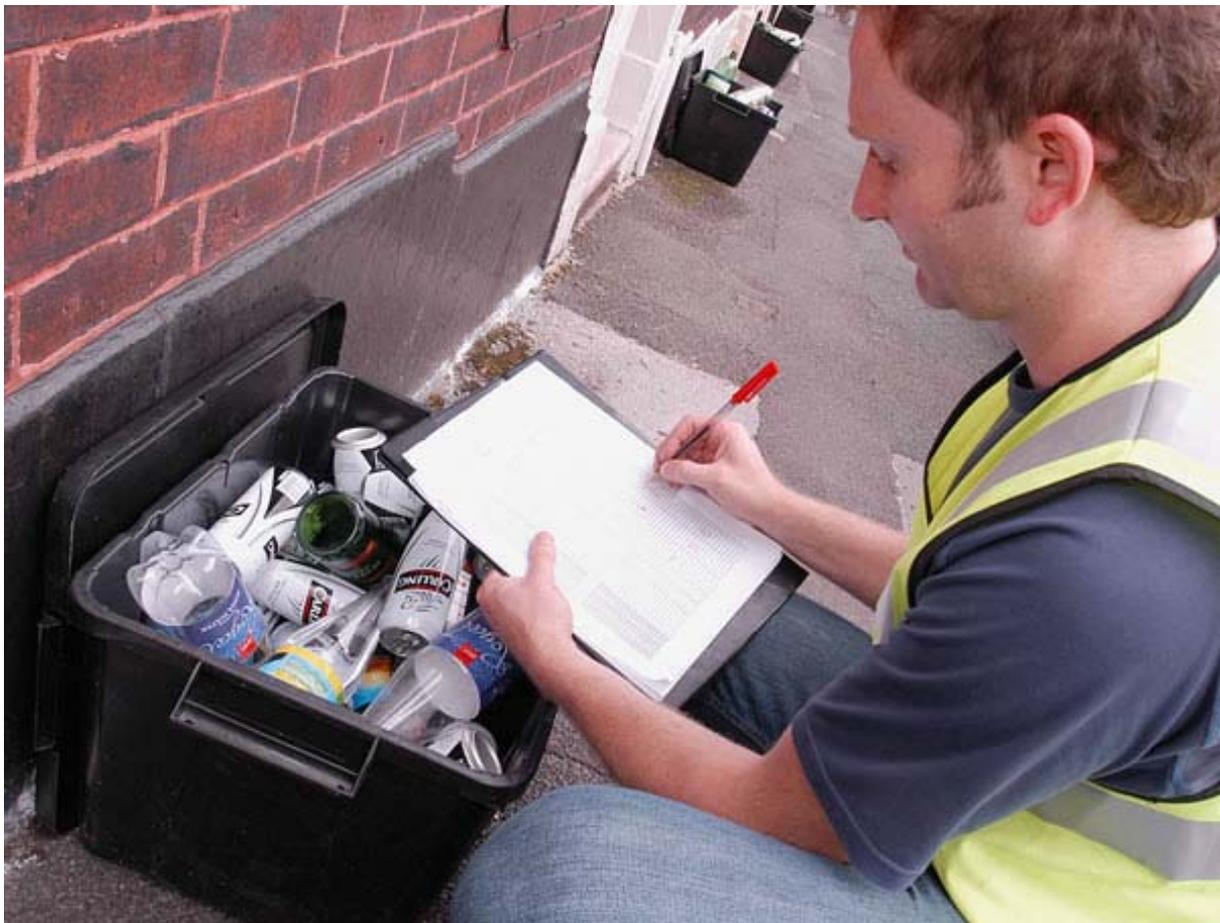

Improving the Performance of Waste Diversion Schemes: A Good Practice Guide to Monitoring and Evaluation

Chapter 2

Planning monitoring and evaluating the results



Monitoring and evaluation helps to identify how a service, scheme or communication campaign is performing so that opportunities for improvement can be identified. This chapter describes how to plan monitoring and how to conduct evaluation of the results, to identify potential improvements.

WRAP helps individuals, businesses and local authorities to reduce waste and recycle more, making better use of resources and helping to tackle climate change.

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Contents

- 2.1 Introduction 2-2
- 2.2 How do I decide what to monitor? 2-2
- 2.3 How do I decide when to monitor? 2-3
- 2.4 What are aims and objectives? 2-3
- 2.5 What types of objectives can I set?..... 2-3
- 2.6 How are the different types of objectives helpful?..... 2-5
- 2.7 How do I set SMART objectives?..... 2-5
- 2.8 What are key performance indicators (KPIs)? 2-6
- 2.9 Can I have some examples of objectives and KPIs? 2-6
- 2.10 I have activity aims and objectives, so why should I set monitoring aims and objectives? 2-7
- 2.11 Selecting monitoring KPIs..... 2-8
- 2.12 The monitoring process..... 2-8
- 2.13 How do I understand what the data are telling me?..... 2-8
 - 2.13.1 Looking at changes over time 2-9
 - 2.13.2 Looking at differences between areas..... 2-9
 - 2.13.3 Looking at different types of data together 2-9
- 2.14 What else can my data tell me? 2-10
- 2.15 How do I identify areas for improvement?..... 2-10
- 2.16 How can monitoring data help me to improve service / scheme performance?..... 2-11
- 2.17 How can monitoring data help my communications? 2-11
- 2.18 How to I decide what to prioritise? 2-12
- 2.19 What other help is available to me? 2-12
- 2.20 Summary of chapter 2-12
- 2.21 Where do you want to go next?..... 2-13

Planning monitoring and evaluating the results

2.1 Introduction

One of the main reasons you will undertake monitoring and evaluation is to understand how a service, scheme or communications campaign is performing so that you can identify opportunities for improvement. This applies to both the waste management services you deliver and the communications you undertake to promote them.

This chapter outlines the process that you should be going through when planning to monitor. It describes how to set aims and objectives (both for the activity you want to measure as well as the monitoring you need to do), it gives examples of associated key performance indicators (KPIs) with which to measure activity performance, and it explores how you might use the results of evaluation to improve your service or campaign.

Monitoring and evaluation will identify opportunities for improvement.

2.2 How do I decide what to monitor?

The first step in deciding what to monitor is look at the aims and objectives that have been set for the activity you are measuring. If, for example, you are monitoring the performance of a service / scheme, you should look at the aims and objectives for the service / scheme and identify what it was expected to achieve.

An example aim for your service / collection scheme might be:

To increase recycling.

A related objective for your service/collection scheme might be:

To increase the quantity of recycled material collected from the kerbside to xx% by xx date.

Similarly, if you are monitoring the impact of a communications campaign, you should look at the aims and objectives for the campaign.

An example aim for your communications campaign might be:

To increase awareness and improve recycling behaviour.

A related objective for your communications campaign might be:

To increase by xx% residents' awareness of the materials that are included in the kerbside collection scheme in xx area, via a communications campaign by xx date.

You will then be able to determine what needs measuring to see if the defined objectives have been achieved. This highlights the importance of setting aims and objectives for all work you undertake, so that it can be monitored.

Set aims and objectives for *all* the work you undertake, so that it can be monitored.

If you do not have aims and objectives for your service / scheme or communications campaign, then Sections 2.4 to 2.10 tell you about aims and objectives, and how to set them. They are important in deciding what you are going to monitor.

2.3 How do I decide when to monitor?

If you want to monitor the effect of something, such as a particular campaign or a service change, then you need to monitor both before the campaign starts or the service is changed, and again afterwards. The purpose of monitoring in advance is to establish a baseline from which you can measure a change.

If you are monitoring the effect of a service change, you will need to conduct the second stage of monitoring once the service has bedded in.

If you are monitoring the effect of a communications campaign, you will need to monitor soon after the campaign has finished.

Chapter 4 explains in more detail about timings of surveys and focus groups.

Chapter 5 explains in more detail about timings of participation monitoring and the need to account for seasons if monitoring garden waste collections.

Chapter 6 explains that round tonnages can be monitored before, during and after a campaign.

Chapter 7 explains the need to monitor over several phases to account for seasonal difference in waste composition.

2.4 What are aims and objectives?

An **aim** is a broad statement of what you are trying to achieve and there is usually one overarching aim. An example of a monitoring aim would be 'to measure the performance of the recycling service'.

Objectives are a much more specific statement of what you are trying to achieve and it is common to have more than one objective for a monitoring and evaluation programme. You can demonstrate if you have achieved an objective. Without objectives, it is only possible to argue whether you have achieved an aim.

2.5 What types of objectives can I set?

There are three types of objectives that relate to the measurement of specific inputs, intermediate outcomes, or final impacts.

Inputs relate to something that you have done. Input objectives are largely a measure of your own effort / activity. For example, an input objective for a kerbside collection scheme/service might be:

- to provide containers to 20,000 households with access to a kerbside recycling service by [xx date].

Or for a communications campaign, the input objective might be:

- to distribute 10,000 leaflets by [xx date] to homes on the kerbside recycling scheme / service.

To measure these is very easy – it is a simple count of what you have done. They are a measure of your effort, though not your achievement. The monitoring objectives for the examples above would therefore be:

- to monitor the provision of kerbside recycling containers to households on the kerbside scheme/service by [xx date]; or
- to monitor the number of leaflets distributed to homes on the kerbside recycling collection scheme/service by [xx date].

Outcomes relate to an intermediate change that occurs as a result of actions that you have taken.

Often you will need to make a theoretical assumption to set the objective. For example, the assumption is that by distributing 10,000 leaflets this will result in a change, e.g. that 5000 more residents are aware of the service as a result of the leaflet.

An outcome objective for a communications campaign might be:

- to ensure that 5000 householders that have access to the kerbside collection scheme/service are aware of what recyclable materials are collected by the kerbside scheme/service as a result of the communications campaign.

An example of an associated monitoring objective would be:

- to measure the change in awareness of households provided with a kerbside recycling collection of the recyclable materials that the scheme / service collects before and after the communications campaign.

Impacts are the ultimate result, a tangible change that has occurred as a consequence of your inputs and their outcomes. An example of a scheme/service impact objective would be:

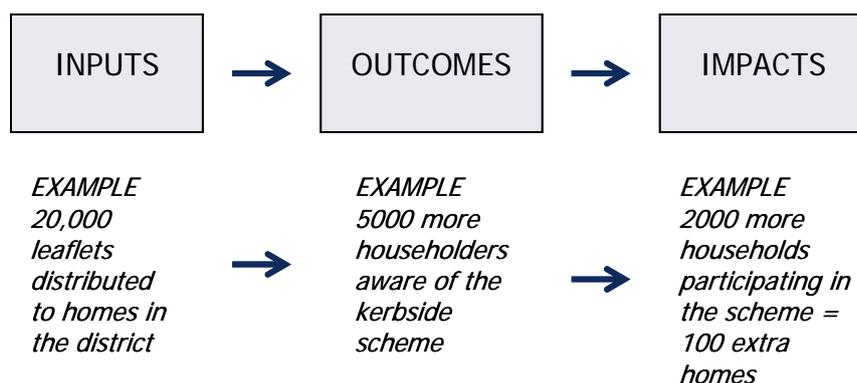
- to increase the tonnage of recyclable material collected at the kerbside by 2% per annum by [xx date].

In this instance, an example of an associated monitoring objective would be:

- to measure the change in material collected for recycling from the kerbside before and after the communications campaign.

What these examples show is that your inputs (e.g. leaflets or provision of recycling containers) lead to outcomes (e.g. increased awareness by residents of the materials that the kerbside collection scheme / service collects), which lead to impacts (2000 more households participating and an increase in the tonnage of the recyclable material collected). Thus the objectives that you set relate to each stage of this process – as shown in Figure 2.1.

Figure 2.1 Relationship of input, outcome and impact objectives



2.6 How are the different types of objectives helpful?

Input objectives are useful for measuring the amount of effort you put in to achieve your aim. They also have the benefit of being relatively easy to monitor because they are within your power to control. However, they don't tell you what the effect is of your activities.

Outcome objectives are useful for determining what changes have happened as a direct result of your inputs. Outcomes are often cognitive (i.e. relating to human thought processes); for example, people's attitudes, levels of understanding, degree of awareness, etc). Outcomes are less within your control than inputs, but you are able to influence outcomes using inputs. Outcomes are also useful because they can give you some indication of what impact is being achieved. It is important to remember, however, that outcomes are only indicative of change – they aren't a substitute for impact measures! It is not always necessary to have outcome objectives, but there should always be at least one impact objective. Where an outcome is identified, it should always lead on to an impact.

Impact objectives are important for measuring the ultimate effect that has been achieved. In this context, they often relate to human behaviours, e.g. recycling more, contaminating less.

Note that it is always good practice to include a target in objectives (e.g. to increase recycling by x%, tonnage by x tonnes, participation by x%) to make them SMART.

2.7 How do I set SMART objectives?

The most common acronym that is regularly applied to setting objectives is that they should be SMART.

Specific. It is important that the objective should be clear and unambiguous and that it is easy to understand what is involved in achieving that objective. For example, an objective for a scheme such as 'to improve the performance of the recycling scheme' is very ambiguous and is actually only an aim. What aspect do you want to improve? Is it the overall rate of recycling, the level of participation in the service or the operational efficiency of the service? Is this a green waste collection, bring bank or a plastic waste collection?

SMART objectives are:

Specific
Measurable
Achievable
Relevant
Time-Bounded

Don't assume common understanding of an objective among different people – clarify the terms you are using.

Measurable. The objective must be capable of being measured in practice not just theoretically. For example, is it actually possible to:

- measure tonnage by collection round if the vehicles are not weighed in individually for each round? or
- measure contamination levels for your area if your dry recyclables are delivered to a materials recovery facility (MRF) shared by other local authorities?

Achievable. Can the objective be achieved? Is it possible, for example, to increase the recycling rate to 20% in three months? Is six months or a year a more appropriate timescale? Having good, reliable data will help ensure that objectives are achievable.

Relevant. Objectives must be related to the original aim. If they are not, then they are not relevant. Ask yourself, is the objective actually important to what I am trying to achieve? Are your objectives going to help you to achieve your aim? Make clear how your actions are going to achieve change – and question your assumptions. For example, a communications campaign objective to deliver a leaflet to provide information about the recycling collection won't improve performance if the problem is that residents do not have a lack of knowledge of the service. The reason for low performance may be something related to the service itself, or to the area covered by the collection.

Time-bounded. Objectives must have a time limit. This makes it easier to measure success or failure and provides a focus for the effort required. For example, it is good practice to set a date by which you expect the objective to be achieved. Timescales should be appropriate and relevant to the objective that you have set.

2.8 What are key performance indicators (KPIs)?

Key performance indicators (KPIs) are quantifiable measures that encapsulate critical success factors and are a framework for measuring achievements. They are presented as units of measurement (e.g. number, percentage, tonnage). They are the tools that enable you to monitor the success or otherwise of your activities. KPIs allow you to convert your monitoring data into something usable and meaningful. Each objective that you set should have at least one related KPI. If you have SMART objectives, then your KPIs are easy to set.

2.9 Can I have some examples of objectives and KPIs?

Table 2.1 illustrates the three different types of objectives and gives some associated KPIs. A more comprehensive list is provided in Annex 2 along with the type of monitoring method you might use to measure the KPI.

Table 2.1 Examples of input, outcome and impact objectives and associated KPIs

Type of objective	Example	KPI
Input	To increase the number of residents receiving the kerbside collection service to 75,000 by [xx date]	Number of households served
	To provide containers by [xx date] to 20,000 households with access to a kerbside recycling service	Number of containers
	To distribute 10,000 leaflets by [xx date] to homes on the kerbside recycling scheme	Number of leaflets
	To ensure that 5000 householders are aware of recyclable materials that the kerbside scheme collects as a result of a communications campaign by [xx date]	Percentage awareness of households
Impact	To improve the tonnage collected by the kerbside recycling scheme by 10% by [xx date]	Tonnage figures
	To decrease waste arisings per household from 600 kg/hh/year to 300 kg/hh/year by [xx date]	kg per household per year (kg/hh/year)
	To increase the number of households participating in the kerbside collection service by 20% by [xx date]	Participation rate
	To decrease contamination on collection round 10 by 50% by [xx date]	Contamination rate
	To increase the capture rate of kerbside collected materials by 2% per annum by [xx date]	Capture rate

As the name suggests, KPIs 'do what they say on the tin'. They are not comprehensive measures, but indicative of what is happening. Nevertheless, they are extremely useful because we cannot possibly monitor everything all the time. Careful selection of appropriate and useful KPIs is therefore important.

2.10 I have activity aims and objectives, so why should I set monitoring aims and objectives?

As well as having objectives for your service / scheme or communications activities against which you can monitor performance, you should also be setting yourself clear monitoring aims and objectives. This sounds very complicated but you need a monitoring aim so that you are guided in your monitoring activities. You need a monitoring objective(s) and associated KPIs to decide what to monitor.

Note that the service / scheme or communication aims and objectives are **not** the same as your monitoring aims and objectives. Your collection scheme or communications campaign might aim to **increase** recycling, or participation – with a target set for what the quantity (%) that you want to achieve and a target date for when you want it to be achieved. Your monitoring aims and objectives will **measure** whether this has been achieved. For monitoring objectives we use terms such as 'to measure, to monitor, to determine'.

See Annex 2 for example aims, objectives and KPIs, tracking through what you want to achieve from your collection service / scheme or communications campaign and the monitoring method required. The relevant chapters of this document in which these methods are described are also indicated.

2.11 Selecting monitoring KPIs

Having set some clear aims and objectives, and identified the activities you will be monitoring, you can decide on key performance indicators (KPIs) that will help you to measure your performance against your objectives. As mentioned earlier, KPIs are units of measurement and, in the case of monitoring work, will relate to things like the number of people surveyed, number of households sampled, proportion of residents monitored, etc. See Annex 2 for a full range of KPIs that you might select.

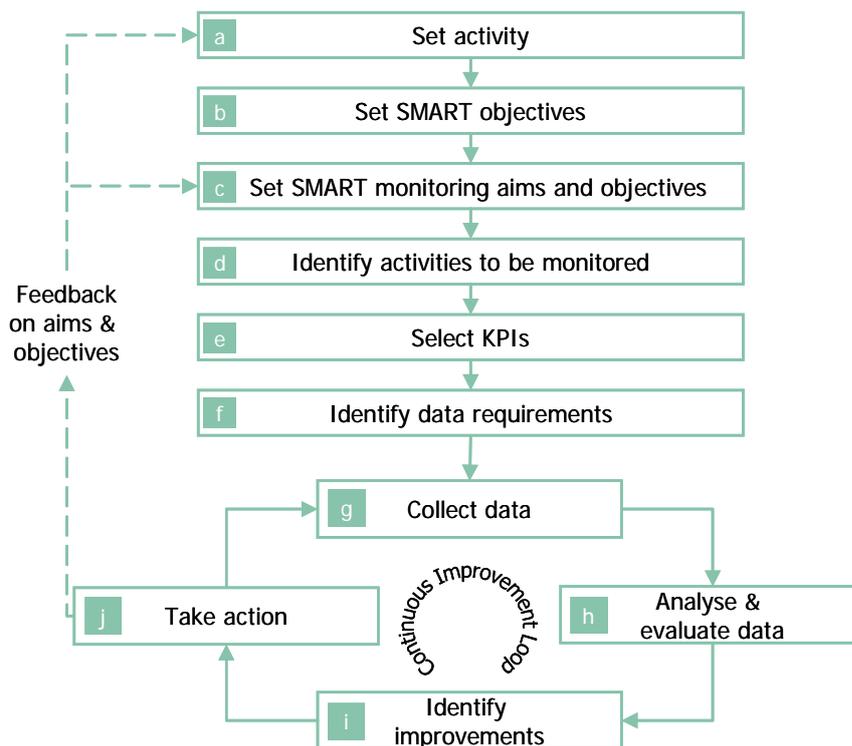
2.12 The monitoring process

Once you have set your aims and objectives, identified the activities to monitor and chosen your KPIs, you need to get down to the business of monitoring by gathering the relevant data in an appropriate manner. See Chapters 4 to 10 for advice on:

- choosing the right methods to use to analyse the data you obtain; and
- deciding what the results tell you about how you're doing.

Your monitoring should be following the continuous improvement loop as set out in Figure 2.2.

Figure 2.2 The continuous improvement loop of monitoring



2.13 How do I understand what the data are telling me?

The information you collect during monitoring is only useful if you spend some time analysing it to understand what it is telling you. You will need to interpret the data by comparing it with other information such as previous data of the same type or findings from other areas.

2.13.1 Looking at changes over time

So, for instance, you should be looking to compare your monitoring data with the same type of data from any previous monitoring you've done to identify any patterns or trends such as increases or decreases in figures over time. The previous information, or baseline data as it is sometimes known, provides a useful benchmark against which to compare subsequent results. It is important to have baseline data if you want to measure impact (e.g. before and after a communications campaign) because without it you cannot tell how much of a change has been achieved.

Example

A local authority wanted to assess the impact of its communications campaign targeting a specific audience with messages about recycling. Tonnage figures showed that the quantity of recyclable material collected increased during the campaign and a waste analysis confirmed that capture rates were improving. A survey of residents was also carried out after the campaign to determine how many people were now committed recyclers. However, because the original monitoring objectives did not include an attitude survey before the campaign, no baseline figures were available about levels of commitment to recycling before the communications campaign began. Therefore, no conclusions could be drawn about the change in commitment to recycling resulting from the campaign.

2.13.2 Looking at differences between areas

As well as making comparisons with previous figures, you may want to compare similar data across different types of systems or different areas.

Example

Luton Borough Council wanted to evaluate the impact of its targeted communications campaign aimed at black and minority ethnic (BME) communities in the borough. The council was able to assess the campaign's impact on attitudes and behaviour by looking at data specific to the target area (where the number of committed recyclers rose by 4% and participation increased by 8%). It was also able to identify significant improvements in this target area relative to the rest of the borough. For example, residual waste tonnages for the area as a whole decreased by 3.6% between 2006-07 and 2007-08. By comparison, in the target area there was a decrease of 4.2%. Similarly, dry recycling tonnages increased by 8% overall over the same period, while in the target area the figure was even greater, at 9.4%.

2.13.3 Looking at different types of data together

In addition to comparing similar types of data to each other, you will also need to look across all the different types of data you have collected to see if they tell you anything useful about the underlying causes or factors that might be affecting performance. If, for instance, you have a scheme that is poorly performing on a particular round, you may want to look at different bits of data to understand why. It may be, for instance, that participation rates are generally quite high but that contamination is also high, resulting in rejection of containers by crews and therefore low capture. You can only establish this by looking at different sets of data for that round (i.e. participation rates, tonnage figures and capture rates). Of course, obtaining feedback from crews will also help but remember that one of the aims of monitoring is to identify actual issues, not what you think the issues are. Examining the figures is important if you are to verify anecdotal feedback.

Example

Somerset Waste Partnership wanted to assess the best option for adding green waste and cardboard to its kerbside-sort collection service. During a series of trials each using different methods of collection, Somerset Waste Partnership monitored the following:

- the quantity of material collected, obtained via weighbridge tickets and (for food waste only) on-street weighing using spring balance scales;
- capture rates for each recyclable material collected at the kerbside, obtained via a waste analysis;
- resident satisfaction with each collection method, obtained via a survey;
- participation rates, obtained via participation rate monitoring; and
- feedback from crews, obtained via meetings with collection staff.

All this information was analysed and assessed to identify which trial was the most successful in maximising the quantity of materials collected in the most effective and satisfactory way possible. Combined with information about the costs of collection for each method, it allowed a conclusion to be drawn about what was the most cost-effective option.

2.14 What else can my data tell me?

As well as identifying potential service changes to improve performance, by looking at your monitoring data you are also in a position to identify any useful lessons learned. What aspects of your service appear to be working particularly well? Which areas receiving your service are performing better than expected? Is there anything about the current situation that you do not want to change? Bear these questions in mind too when planning any service improvements. Similarly, for communications campaigns, consideration should be given to questions such as: What channels worked well when reaching my target audience? Which media were most cost-effective in getting my message across?

Answering these questions will help in future planning. So will revisiting your objectives and comparing the results you obtained with the target figures that were set. What do the data you collected tell you about how well, or not, you were able to meet that objective? How close were you to meeting it? Did you exceed it substantially? This will help you to set realistic objectives in the future.

Remember: You are going to have to report on how well your objectives were met, so be sure to revisit your objectives when analysing and reporting the data you have collected.

2.15 How do I identify areas for improvement?

Having obtained and analysed your data, you should be in a position to identify potential areas for improvement. Consider, for example:

- Are there areas with particularly low tonnage figures?
- Do you have any areas with low participation rates, low capture rates or high levels of contamination?
- Is there a particular material that is showing consistently low capture?
- Is there a particular type of contamination affecting your service / scheme?

In addressing these types of questions about performance levels, you will need to spend some time identifying the issues that are affecting your service / scheme.

- Do households have everything they need to participate effectively (e.g. the right container, the right information, knowledge of collection days)?
- Are the collections happening effectively or are there service problems (e.g. missed collections, overflowing communal bins)?
- Are there extraneous factors that may be affecting performance (e.g. vandalism of bring sites, an increase in population following an influx of migrant workers)?

To answer some of these questions you need to look at sources of data such as surveys, complaints and feedback to call centres, and focus groups. You may find that you don't have enough information to form an opinion and need to do some more data gathering before you can draw any conclusions. Be sure to do so before pressing on to decide on potential improvements.

It would also be a good idea to look at what factors have already been found to affect scheme performance. A report on WRAP's research into barriers to recycling describes some of the issues that may be having an effect. It can be downloaded from:

http://www.wrap.org.uk/local_authorities/research_guidance/communications/barriers_to.html

2.16 How can monitoring data help me to improve service / scheme performance?

Having spent some time analysing the data and comparing different sets of data, you will need to decide what can and should be done, and in what order.

For instance, if you decide that the service or scheme to a particular neighbourhood needs to be improved to reduce missed collections, it makes sense to do this before undertaking any communications activity to promote the service or scheme.

Similarly, if you decide to add a new material to your service or scheme to increase overall recycling rate, you may decide to take vehicle capacity into account and reorganise the rounds. This will have to be done before printing and distributing any calendars to the residents affected.

Some examples of local authorities who have used monitoring data to inform service or scheme improvements are provided in Annex 1.

2.17 How can monitoring data help my communications?

You can also use the data that you gather to inform future communications activity. So, for example, data from a waste composition analysis have been used by the Kent Waste Partnership to target specific socio-demographic groups with particular recycling and waste reduction messages, based on what they were found to be throwing away most often. Similarly, the Greater Manchester Waste Partnership developed a communications campaign just emphasising the recycling of plastic bottles in order to reduce the levels of contamination from other types of plastic found in recycling loads at the MRF.

Some examples of local authorities who have used monitoring data to inform communications improvements are provided in Annex 1.

2.18 How to I decide what to prioritise?

Based on what you know from your monitoring data, draw up a list of potential changes to service / scheme or communications that you could implement. Assess and prioritise these by identifying those improvements that:

- are likely to yield the biggest gains;
- will be quickest to achieve;
- are likely to be most cost-effective; and
- are strongly in line with corporate drivers.

2.19 What other help is available to me?

To set your objectives you may need to seek information and advice on what is achievable. This can be done by looking at what others have accomplished – WRAP can provide lots of good examples of what other local authorities have achieved.

There is a wide range of assistance available to further help you to define what you could be doing to improve performance. WRAP has developed a number of different resources for specific areas of work, including:

- revised communications planning guidance;
- new guidance on recycling in flats;
- a new online toolkit about waste prevention; and
- a guidance document and online toolkit for tackling low participation areas (LPAs).

In addition, there are a number of training courses that you may find useful in helping to plan service / scheme improvements, particularly:

- WRAP's training courses on collections and communications.

Finally, WRAP provides advice and support through a number of different teams including:

- Local Government Services team (incorporating ROTATE and Local Communications Advisors); and
- waste prevention advisors.

For more information, contact WRAP's Local Government Services team on 01295 819661 or e-mail: lgs@wrap.org.uk

2.20 Summary of chapter

This chapter has:

- explained how good monitoring and evaluation can be used to improve your service, scheme or communications campaign (Section 2.1);
- provided guidance on what to monitor (Section 2.2);
- advised on when to monitor, with timings and a phased programme (Section 2.3);
- defined aims and objectives with details of input, outcome and impact objectives (Sections 2.4 to 2.6);
- highlighted the importance of SMART objectives and KPIs (Sections 2.7 to 2.11);
- discussed the monitoring process, data gathering, comparison and analysis (Sections 2.12 and 2.13);

- identified potential for data interpretation to enable service / scheme improvement / development and the setting of future priorities (Sections 2.14 to 2.18); and
- suggested sources of further help and advice (Section 2.19).

2.21 Where do you want to go next?

Chapter 1 provides an **introduction** and helps you decide which chapters you need to look at.

Chapter 3 gives details for consideration when **sampling and profiling**.

Chapter 4 deals with monitoring **awareness, claimed behaviour and satisfaction**.

Chapter 5 deals with monitoring **service / scheme usage and participation**.

Chapter 6 looks at the use of **tonnage data**.

Chapter 7 explains how to measure **capture rates**.

Chapter 8 considers monitoring of **contamination levels**.

Chapter 9 looks at approaches to measuring **waste reduction**.

Chapter 10 deals with monitoring **communications campaigns**.

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