



UNITED KINGDOM: *PARRETT CATCHMENT PROJECT*

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Abstract. Information is provided about a new approach to flood management, through partnership and consensus, for the development of an integrated and sustainable flood management plan, and the promotion of measures to modify land use across the catchment under study. This was achieved through a participative process of local people representing all the interests in the area and experts on equal terms. The resulting action strategy, which includes structural and non-structural components, was endorsed by all those involved, and its implementation is to be shared by a variety of partners.

1. Location

The Parrett Catchment is located in the southwest region of the United Kingdom. It is the largest river system in the County of Somerset, covering about half of that county and incorporating five major rivers, which discharge via the Parrett into the Bristol Channel. The area includes the urban areas of Bridgwater and Taunton, as well as the internationally known wetlands of the Somerset levels and Moors. It has a surface of 1,690 km², with most of the lower catchment below high tide level. Due to this topography, regular flooding of the lower lying land is expected, and the communities, local industries and the landscape have evolved together over the centuries to cope with these conditions. In consequence, the area has a long history of flooding, as well as of serious contention over flooding and water management issues.

2. Nature of floods

Much of the catchment receives higher than average rainfall and the capacity of the river channels in the lower reaches is often exceeded. In addition, besides the risk from fluvial (rainwater flooding), this is often compounded by high tides preventing evacuation of floodwaters.

A large portion of the catchment lies below high tide level; it is protected from the sea itself by coastal defences. The lower reaches of the Parrett are tidal for many kilometres inland, which reduces discharge capacity and narrows the channel with tidal silt. The embanked rivers overflow into washlands known as moors. These act as storage areas until the rivers subside. If the rivers remain high, the moors can be subjected to prolonged flooding. Because the rivers are embanked, in many moors the floodwaters cannot return by gravity and can only be drained by pumping back into the rivers.

When the rivers overflow in an unplanned way or for too long and overflow the storage capacity, the water will flood roads and villages, and in some cases the latter can be cut off for several weeks, as they were before artificial drainage started 1000 years ago.

A severe summer flood in 1997 caused serious localised damage to both farming and ecological interests; this was probably the point where the views of farmers, conservationists and community interests began to converge. Subsequently, during the winter of 1999/2000, two relatively small floods overlapped. The second one arrived before the washlands had been emptied from the previous flood. The traditional storage areas were overwhelmed and new areas of farmland, major roads, businesses, houses and ecological interests were flooded for several weeks. Although the public is used to some flooding in most winters, the new flooded areas and duration of the flooding provoked fears that the highly managed system was under severe stress and that the historic

¹ Parrett Catchment Project



system unlikely to cope with future major events. Added to this were the problems of lack of maintenance of the existing system and ageing plant and equipment due to lack of investment.

3. Flood and water management measures

The above events caused that public concern about effective flood management rapidly rose. As a result of this, local people and organisations came together to initiate a fresh approach to flood management by setting up the Parrett Catchment Project (PCP) in March 2000. The approach had the aim to manage flood risk and water in a more sustainable way through partnership and consensus, with the following objectives:

- Developing an integrated flood management plan for the catchment;
- Providing a sustainable approach to flood management, including flood defences for town and villages and safeguarding of environmental interests; and
- Promoting measures to modify land-use across the catchment.

Subsequently, the concept of the PCP was developed by inviting a wide range of project partners and including strong community representation covered by several organisations. The ideas were then further refined and tested in a series of workshops and seminars. The workshop process combined local people and experts, with all participants on equal terms and assisted by external neutral facilitators.

In February 2001, a wide range of participants representing all the interests in the area endorsed the PCP Action Strategy. The Strategy provides a long-term vision for the catchment over the next 50 years. A number of objectives have been identified to achieve this vision, to be met through a programme of initiatives, grouped into three time frames: short (1 to 5 years), medium (5 to 10 years) and long term (over 10 years).

The PCP has incorporated the concept of integrated catchment management within the Action Strategy, grouped under three main categories, namely: (i) changes to rural land use; (ii) reducing the runoff from built development and stopping construction in the floodable area; and (iii) improving the system and rate of evacuation. It has identified 12 mutually agreed structural and non-structural components of integrated catchment management, as follows:

- a) Changes in management of upper and mid-catchment farmland to assist flood control;
- b) Creating temporary flood storage areas in designated areas on farmland in the upper and mid-catchment until after the peak flow has passed in flood plain water courses;
- c) Storing storm water temporarily in designated flood storage areas for creating new wetland habitats throughout the catchment to intercept and store flood water during flood events;
- d) Improving the efficiency of the lower river system, particularly in the tidal reaches by dredging and maintaining river channels;
- e) Restoring flood plain river banks to planned designed levels and in tidal reaches to protect against rising sea level;
- f) Upgrading pumping stations to ensure their reliability and efficiency in operating the flood management system;
- g) Spreading flood water storage across moors to lessen the average depth and period of flooding;
- h) Building a tidal sluice or barrier downstream of bridge water to exclude all tides and bring greater control to the management of the lower river system;



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- i) Upgrading channels to enhance gravity drainage to increase the volume of flood water that can be evacuated by gravity;
 - j) Restricting new development on the flood plain to avoid allocating land for development in floodable areas of the upper and lower catchments; and
 - k) Establishing more woodland in the catchment for a positive impact on water retention.

Having identified these components, an Integrated Catchment Management Plan (ICMP) was to be developed in the autumn of 2002 to provide the framework for their implementation, which is to be shared by a variety of partners.

4. Participating institutions

The PCP is a broad-based partnership whose long-term goal is to develop a sustainable approach to water and land-use management that benefits the economic, social and cultural life of the catchment and conserves and enhances the environment. Since its foundation in March 2000 and besides the *Somerset County Council* and the *Environment Agency*, the partnership has grown to include a number of partners in the UK, among which may be cited the *West Dorset District Council*, the *Regional Development Agency*, *British Waterways* and the *Council for the Protection of Rural England*. International links have been forged with partners in Holland, France and Germany, all facing similar issues, to share knowledge and experience.

The challenge for the PCP will be to continue developing the partnership fully into an integrated body that pulls its resources and skills to deliver the key objectives and to carry out the agreed programme of initiatives over the coming years on various levels:

- a) The development of the ICMP which continues to set the framework for the PCP and its partners to work;
- b) Brokering and discussion between key stakeholders, agencies and authorities to identify and agree on the way forward on particular issues; and
- c) Establishing demonstration sites of new initiatives to identify and promote best practice, in commissioning new studies to enhance current understanding for lobbying for policy change to promote and support PCP initiatives.

5. Main lessons learnt

- Managing flood events minimises the adverse effects on local communities and land users, and maximises benefits for conservation and wildlife.
- Flood risk and water management can be managed in a more sustainable way through partnership and consensus.
- Local people should come together and agree on a long-term management plan, which is based on the river catchment.
- The innovative nature of PCP's partnership approach can be used as a pilot project, the principles of which may be applied to other areas hit by flooding.
- The partnership approach and the strength of a mutually agreed strategy have been recognised as a model for best practice.