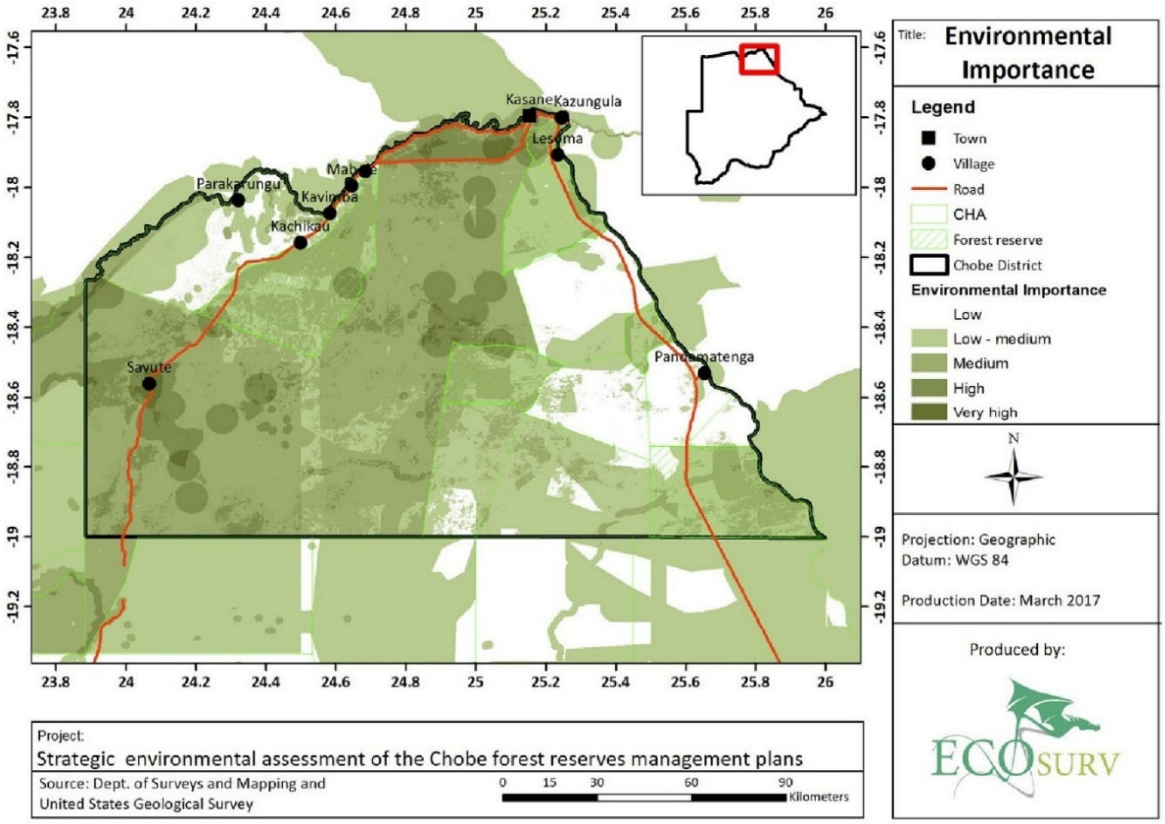
Sensitivity mapping for Chobe Forest Reserve, Botswana

Source: Ecosurv (2018)

An initial SWOT focused an SEA of the Chobe Forest Reserve, Botswana, on the main cumulative impacts and opportunities. Each cumulative impact was placed within a resilience framework of domain (social, economic, and biophysical), scale, and time. This provided an understanding of where cumulative impacts were within the overall landscape and what was driving them.

GIS data was then used to generate a land use conflict matrix of the three domains. The layers were combined to provide an overview of areas of sensitivity for biophysical aspects and for socioeconomic aspects, so that these can be evaluated separately. Figure A18.1 provides an example of the environmental importance of different areas of Chobe District.

Figure A18.1: Environmental importance of areas in Chobe District



Subsequently, these layers were ranked to assign a standardized value so that they could be analyzed for potential land use conflicts using the LUCIS conflict management tool. The tool combined the different inputs to identify preferences and objectives and allowed decisions to be made on factual evidence as to what types of land use should be selected for which locations.

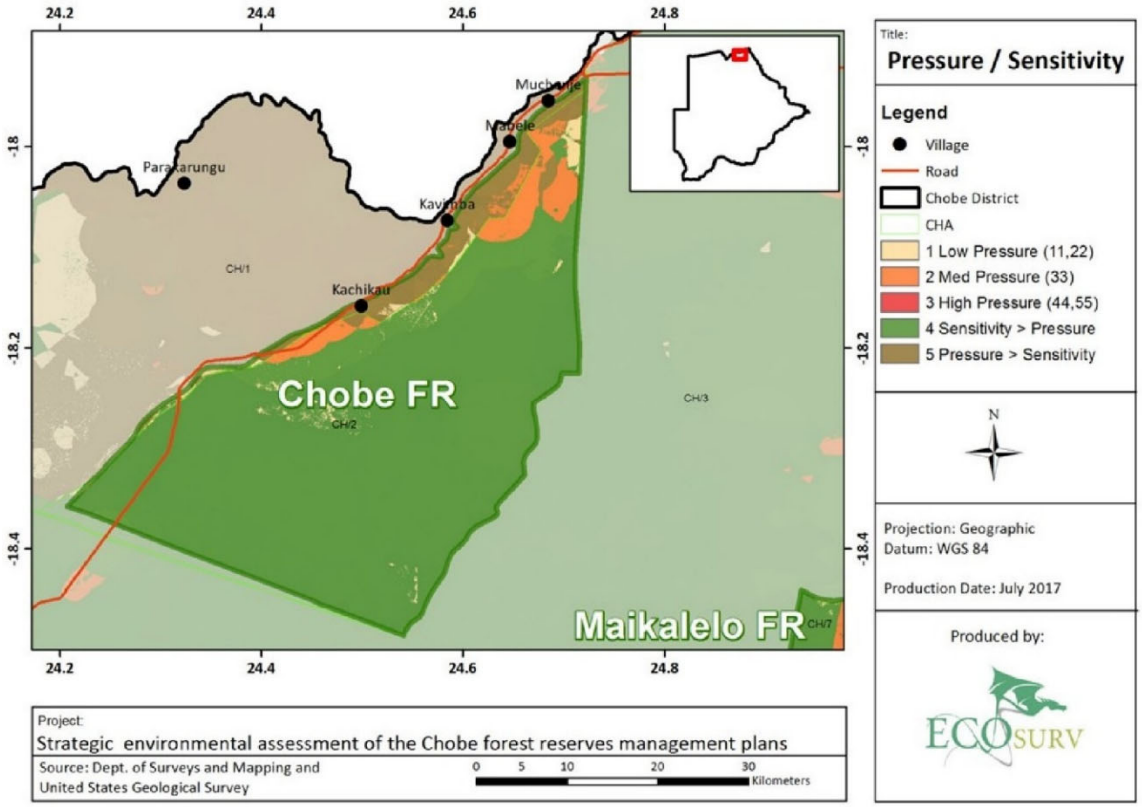
In the case of the SEA, the final raster GIS was a grid of cells each containing 25 possible combinations of socioeconomic and biophysical values. Thus, where socioeconomic values were high (as in arable agricultural areas) and biophysical values were low, no conflict was identified. But where both were high,

conflict occurred and required management to address. The mapped raster values provided a framework for management planning of each forest area.

From stakeholder workshops, a number of data sets were identified that were used to prepare a description of the present state, and the pressures and sensitivity maps an overlay of the two (pressure x sensitivity) was used to spatially highlight the main areas of concern. Figure A18.2 is an

example of combining environmental sensitivity with pressures to identify areas of existing and potential conflict.

Figure A18.2: Pressure-sensitivity map for Chobe Game Reserve



A hub-type SEA was undertaken for the Okavango Delta Ramsar Site (ODRS) in 2010–2012. Because of its complexity and multiple land uses, the SEA included a wide range of specialists from different disciplines. The SEA was undertaken for the Tawana Land Board (as the owners of the ODRS) and guided by the Department of Environmental Affairs (DEA) as the party responsible for the Ramsar treaty implementation.

Figure A18.3 is an example of combining environmental sensitivity with pressures to identify areas of existing and potential conflict.

The SEA influenced the review and updating of the Okavango Delta Ramsar Site (ODRS). It provided clear guidelines and targets for most of the development pressures faced by institutions such as the Tawana Land Board. The use of LUCIS (Land Use Conflict Information System) was adopted by the Land Board in planning on most conflict areas, especially in the panhandle area of the Okavango Delta.

Figure A18.3: Map showing areas of existing and potential conflict, Chobe Forest Reserve