The Senegal River Basin

The Senegal River Basin lies across parts four countries in the West African Sahel: Guinea, Mali, Mauritania and Senegal (see Chart 1). The river’s main tributaries of Bafing, Bakoye and Faleme originate in Guinea in the Fouta Djallon Mountains and drain 1,800 kilometers from their confluence near the Senegalese city of Bakel to the Atlantic Ocean. At Bakel, the annual discharge of the Senegal is calculated to be 20 km.

All four countries are former French colonies and gained their independence in the early 1960s. A history of cooperation among the countries concerning the Senegal River best characterizes basin management. The Senegal River Basin provides the seemingly rare example of countries working together to negotiate an optimal outcome for all involved. In 1963, the countries signed the Bamako Convention which declared the Senegal an “international river.” Five years later, the Labé Convention further formalized cooperation among states by creating the Organization of Boundary States of the Senegal River to coordinate activity on the river.
As drought conditions in the area worsened in the early 70s, Mali, Senegal and Mauritania formed the Organization for the Development of the Senegal River (OMVS). The OMVS was created to increase food production and secure food and water for the peoples of the Senegal River basin. The major accomplishments of the OMVS have been the construction of 2 dams on the Senegal: the Manantali in Mali and the Diama near the mouth of the river at the Atlantic. Completed in 1986, the primary goal of the Diama Dam is to curtail salt water intrusion up the river from the ocean. During times of low water flow, salt water had flowed up the river damaging soils and harming agricultural production. The Manantali, at the opposite end of the river, was built to control and store flood waters for release during dry periods for irrigational purposes. In addition to acting as a reservoir, the dam is also a hydropower plant which so far has produced energy for urban areas but is yet to reach close to the originally expected capacity.

The dam projects have succeeded in regulating water flow in the Senegal but have had other negative consequences that now must be dealt with by OMVS. Changing agricultural traditions from flood recession farming to irrigated plot farming has proven to be much more difficult than imagined. Rice was envisioned as the crop to be grown to feed locals and sell on the market, but farmers have not embraced the change for several reasons. Perhaps the biggest problem is a cultural one as those most affected by altering the Senegal’s flow (farmers along the river) were never included in any of the decision-making process. The international community advised policy makers in the three

<table>
<thead>
<tr>
<th>Country</th>
<th>Total area of the country (km²)</th>
<th>Area of the country within the basin (km²)</th>
<th>As % Of total area of basin (%)</th>
<th>As % of total area of country (%)</th>
<th>Average annual rainfall in the basin area (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guinea</td>
<td>245,857</td>
<td>29,475</td>
<td>6.1</td>
<td>12.0</td>
<td>1120 2100 1475</td>
</tr>
<tr>
<td>Mali</td>
<td>1,240,190</td>
<td>139,098</td>
<td>28.8</td>
<td>11.2</td>
<td>455 1410 855</td>
</tr>
<tr>
<td>Mauritania</td>
<td>1,025,520</td>
<td>242,742</td>
<td>50.2</td>
<td>23.7</td>
<td>55 600 270</td>
</tr>
<tr>
<td>Senegal</td>
<td>196,720</td>
<td>71,866</td>
<td>14.9</td>
<td>36.5</td>
<td>270 1340 520</td>
</tr>
<tr>
<td>For Senegal basin</td>
<td>483,181</td>
<td></td>
<td>100.0</td>
<td></td>
<td>55 2100 550</td>
</tr>
</tbody>
</table>

Chart 1  Source: UN FAO
countries to diversify crops and the decision was made, regardless of tradition or culture.

Just as devastating to those living in the basin has been the proliferation of disease carrying snails which thrive in fresh water. Snails carrying the worm that causes schistosomiasis have exploded in the low salinity water of the river due to the Diama Dam and surveys have estimated as much as 90% of the people living along the river to be infected. The ecosystem as a whole has been badly damaged as fish and other wildlife that thrive in brackish waters have died off. The social fabric of the Senegal River Basin has been tested as vast numbers have either moved to urban areas or migrated elsewhere in response to the fishing and agriculture woes.

The future appears difficult for the region with continued rainfall decrease projected and major policy changes needed to rectify the ecosystem of the basin. The OMVS has begun to attempt to replicate flood conditions to allow a return to flood recession farming practices and signs have pointed to a shift to more inclusive policy-making to include all stakeholders.

Source: UN FAO