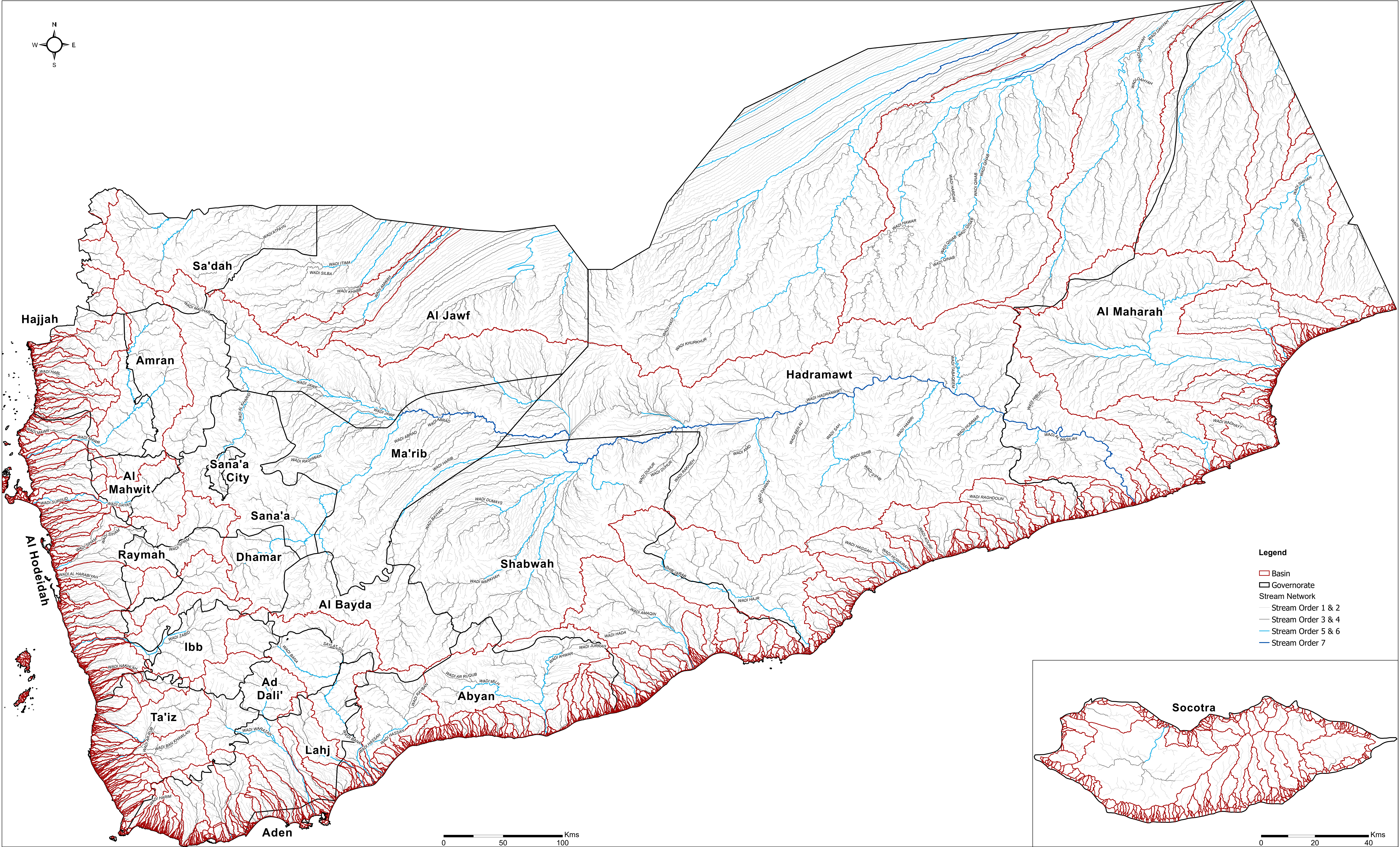


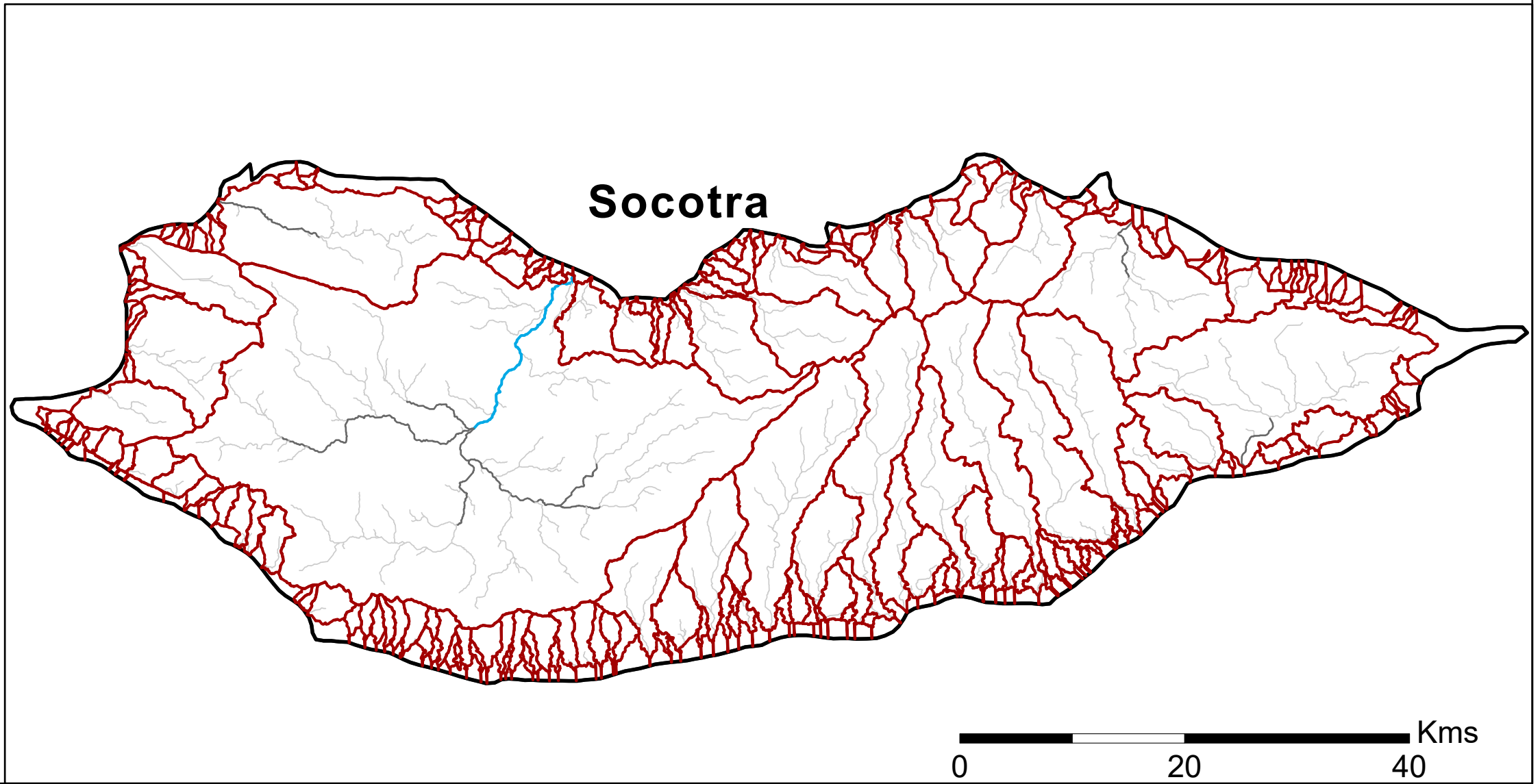
YEMEN - Watershed Analysis

Drainage Basin and Stream Network at National Level - May 2020

Intended for Exploratory Purposes
Version 1
Production date : 10 May 2020



- Legend**
- Basin
 - Governorate
 - Stream Network
 - Stream Order 1 & 2
 - Stream Order 3 & 4
 - Stream Order 5 & 6
 - Stream Order 7



This map shows watershed boundaries and stream network based on its order in Yemen. A watershed is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel. Watersheds can be as small as a footprint or large enough to encompass all the land that drains water into rivers.

Coordinate System: GCS WGS 1984
File: REACH_YEM_Map_Watershed_National_10May2020_A0_EN_V1
Contact: reach.mapping@impact-initiatives.org

Methodology Note:
The delineation of watersheds can be divided into types, and these are either area-based or point-based. The area-based method was used in this analysis to divide Yemen into a series of watersheds, one for each stream section. ArcGIS Pro was used to process and develop NASADEM (Improved Digital Elevation Model with 30m spatial resolution) as well as extract flow direction, flow accumulation, drainage basins, and stream network. The derivation of the stream network is based on a threshold accumulation value.

This map shows the stream network with a threshold value of 5,000, meaning that each cell of the stream network has at least 5,000 cells flowing into it. Stream ordering is a method of assigning a numeric order to links in a stream network. This order is used for identifying and classifying types of streams based on their number of tributaries. The Strahler method was used to assign orders where the stream order increases when streams of the same order intersect.

| Basin Area (km ²) | No. of Basins* |
|-------------------------------|----------------|
| 1 - 10 | 1,028 |
| 10.01 - 100 | 339 |
| 100.01 - 1,000 | 134 |
| 1,000.01 - 10,000 | 39 |
| 10,000.01 - 138,292 | 8 |

| Governorate | No. of Basins** |
|-------------|-----------------|
| Ma'rib | 1 |
| Sana'a City | 1 |
| Ad Dali' | 3 |
| Raymah | 3 |
| Amran | 4 |
| Sana'a | 4 |
| Al Bayda | 4 |
| Al Jawf | 6 |
| Al Mahwit | 7 |
| Ibb | 7 |
| Dhamar | 7 |

| Governorate | No. of Basins** |
|-------------|-----------------|
| Sa'dah | 9 |
| Hajjah | 55 |
| Aden | 63 |
| Ta'iz | 119 |
| Lahj | 136 |
| Shabwah | 141 |
| Hadramawt | 179 |
| Abyan | 193 |
| Socotra | 208 |
| Al Maharah | 242 |
| Al Hodeidah | 292 |

Data sources:
DEM: NASA JPL (2020). NASADEM Merged DEM Global 1 arc second V001 [Data set]. NASA EOSDIS Land Processes DAAC.
Resolution: 1 arc second (30m)
Administrative boundaries: OCHA
River(Wadi) Names: DIVA-GIS (<http://www.diva-gis.org/>) and HOTOSM

Note: Data, designations and boundaries contained on this map are not warranted to be error-free and do not imply acceptance by the REACH partners, associated, donors mentioned on this map.