



The 3<sup>rd</sup> International Geography Symposium - GEOMED2013

## Water erosion in Zonouz river basin

Seyed Esmail Asgharpour\*

*Islamic Azad University, Shahre Rey Branch, Tehran, Iran*

### Abstract

This study focuses on the land erosion by water in Zonouz valley. It is located in the N.W. part of Iran which is surrounded by two mountain ranges and has very cold and snowy weather in winter and cool summers. River terraces and alluvial fans which were built by Zonouz river are considerably important in the area. The main river of the area which flows from east to the west covers an area of 4630 km. The highest point of this basin is Soltan Sanjar Mt with 3200 meter elevation in the east and the lowest point is on the basin outlet in boundary city of Jolfa 300m elevation. It derives from Soltan- Sanjar Mt.in the east and flows to the west. In Cher- Cher area, it joins to Zilber river in Marand plain and finally enters into Aras river at border between Iran and Azerbaijan, finally reaches to the Caspian sea. This paper based on GIS methods, topographic map 1:50.000 and geologic map 1:100.000 scale in order to find out, the elevations, gradients, hydrographic layers, lithologic layers and orogenic movements which have affected on degradation of Zonouz valley. The precipitation, type of soil, gradient of land, effect of climate and hydrological cycles are the main factors that affect on land erosion. After eight years, a considerable change occurred in river discharge by making a dam on the river. The purpose of paper is to show the terraces and alluvial fans were formed before the construction of dam would be built on it. Flow of river in the area plays a major role on land degradation and creating various landforms. Thus, fluvial processes are the geomorphic process associated with running water. Therefore, fluvial landforms and landscapes are produced by currents of streams.

Gradient of valley, the volume of water and form of valley play a major role on land degradation Rivers degrade (erode) and aggrade (deposit). Hence, the landscape contains degradational or erosional landforms which are created when gravels pebble and sands are removed. Depositional landforms are resulted from the accumulation of sediment. Badland of Zonouz is an example of such an erosional landscape. Resistant material on hills has given a beautiful shape to the hills.

© 2013 The Authors. Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Selection and peer-review under responsibility of the Organizing Committee of GEOMED2013.

*Keywords:* Aggradations; degradation; erosion; fluvial; landform.

\* Corresponding author. Tel.: +98-912-3167021.

E-mail address: [e\\_asgharpour12@yahoo.com](mailto:e_asgharpour12@yahoo.com)

## 1. Introduction

Zonouz, is a small town in east Azerbaijan province N.W of Iran, Situated in a semi- dry geographical region. It is located on 45 degrees and 46 minutes E. Longitude and 38 degrees and 39 minutes. N. Latitude. It's altitude is 1600 meters above sea level. Zonouz valley is surrounded by two mountain ranges from north and south and connected to the highest mountain in the east named Sultan Sanjar, 3168 meters height. Zonouz River which is considered a vital river for the inhabitants derives from the west slopes of this mountain. The drainage basin of this river which is 4630 km. The annual discharge of river was 1.48 cubic meters in 2008 comparing to the last two decades was 3.4 cubic meters but volume of the river has been decreased since 1985.

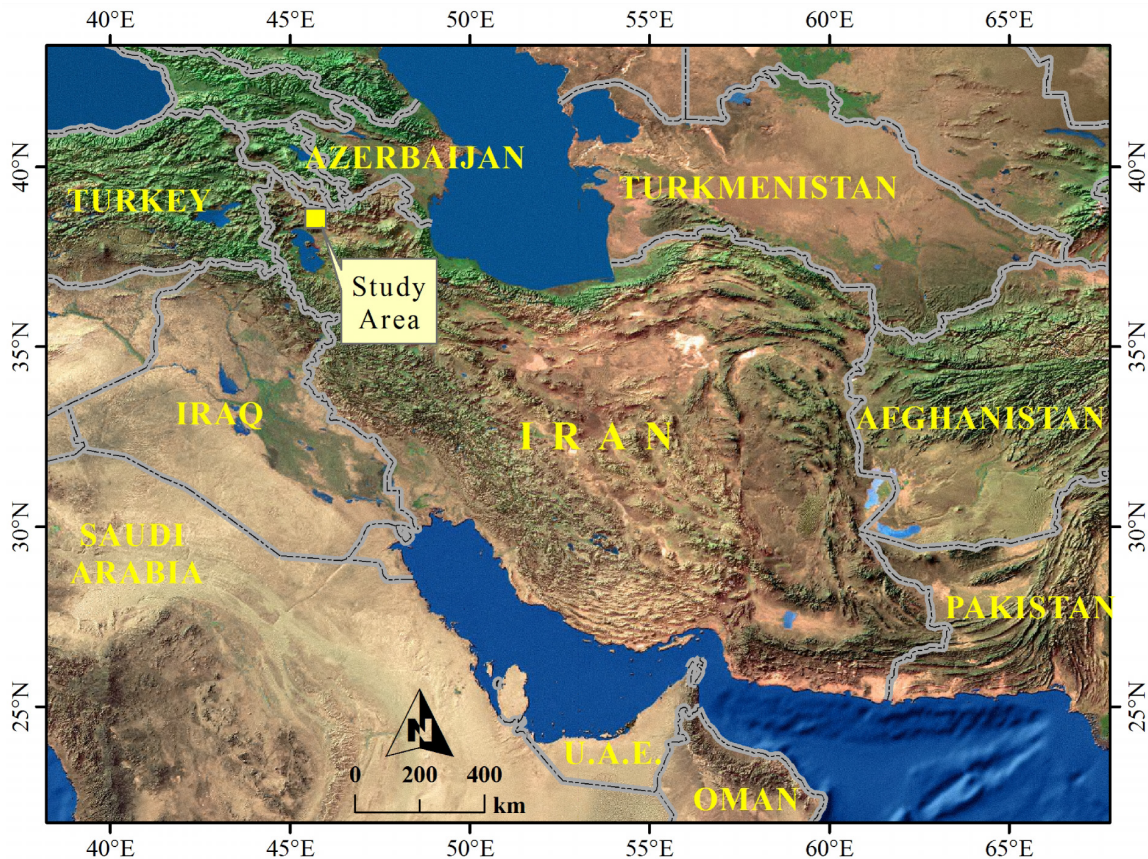


Fig. 1. Location map of Zonouz river basin

In 2004, a reservoir dam was built on sand – gravel foundation on clay- core .The height of dam 60 meters and the length of crown is 177.5 meters (Fig. 2). The River irrigates 1600 hectares of farming lands and 400 hectares of orchard gardens. In Marand plain, it joins to Zilbir River and keeps on its running to the west. Near Khoy city, it joins to Qutor River, and then it flows to the north, near Jolfa city enters into Aras River which is considered one of the largest rivers of region (Fig. 3)

## 2. Research Method

The method which was used for preparing this paper based on three scopes:

- Study is based on observations and inquiries of author.

Download English Version:

<https://daneshyari.com/en/article/1116879>

Download Persian Version:

<https://daneshyari.com/article/1116879>

[Daneshyari.com](https://daneshyari.com)