Abstract:

The aim of this work is to take stock of the current level of knowledge about Algerian inland ponds (reservoirs, lakes, lagoons) from the physico-chemical, hydrobiological and biocenological point of view. In fact, many studies have been synthesised in order to identify these aquatic ecosystems, to classify them according their morphodynamical, physico-chemical and biocenotic peculiarities and to draw up an ecological assessment. Then, we will try to determine favourable sites in order to insure a sustainable extensive aquaculture.

This study is divided into three chapters: the first one is a presentation of Algerian freshwater potential with its geomorphologic, climatic and physico-chemical characteristics.

The second part is about the Algerian aquaculture development program, which is undergoing into its final steps from experimental towards production phase. The targets in terms of realization show that the strategy of development is facing various difficulties at different levels. The actual aquaculture production is mainly carried out in inland fishing projects of intensive fish culture. In order to insure a sustainable aquaculture, we consider the actions undertaken on the ground through an analysis in terms of administrative organization, regulation, research, formation, vulgarization, national and investment.

In the third part, two models are studied: a genetic approach of an autochthon species from the genus *Barbus* is carried and experiments about *Tilapia Oreochromis. niloticus* which is a very rustic species adapted to extensive or intensive breeding. Our experiments under laboratory conditions towards the two parameters ”salinity and optimal growth” showed that *O. niloticus* has a broad hyaline interval enabling the fish to adapt up to 20 ‰ salinity with an optimal growth rate at this level of salinity. This capability suggests the possibility of cultivation of *O. niloticus* at a vast scale in the south of Algeria where conditions of temperature and salinity of waters are favorable for growth and reproduction of this fish. Our results consolidate the tests of tilapia culture in progress within hydro-agricultural installations in arid and semi-arid areas within various fish farms in semi-extensive or intensive breeding systems.

Keywords: Freshwater, ponds, inland aquaculture, *Barbus, Tilapia*, Algeria.