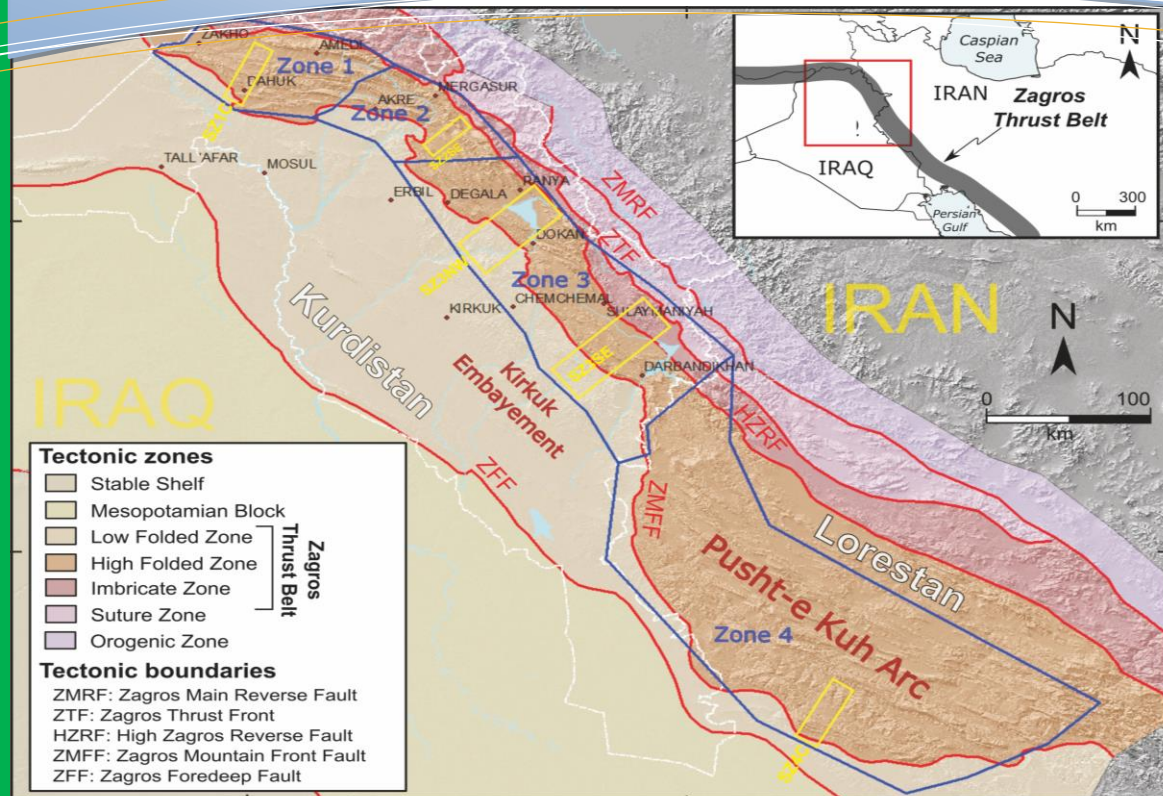


HYDROCARBON PROSPECTIVITY OF THE ZAGROS THRUST BELT: KURDISTAN AND LORESTAN HC PROVINCES



The NW-SE-trending Zagros thrust belt extends for approximately 2000 km from the Taurus Mountains in Turkey and Syria in the northwest, through northeast Iraq (Kurdistan) and the central Iran Plateau, southeastward to the Persian Gulf foreland towards the southwest. This prominent thrust belt is a very prolific hydrocarbon province and hosts more than 5% of the world's hydrocarbon reserves (Cooper, 2007). Intense exploration has been mainly focused on the productive Fars Zone and Dezful Embayment regions of Iran in the central sector of the Zagros thrust belt. During the last years, the northwestern sector of the Zagros, extending over the Kurdistan region of northeast Iraq and the Lorestan province of Iran has increasingly received attention related to a renewed interest for hydrocarbon exploration. According to the Oil & Gas Journal, Iran has an estimated 158 billion barrels of proved crude oil reserves, representing almost 10% of the world's crude oil reserves. Whilst the geological reasons for much of this success are fairly simple to understand, predicting the best areas to target is somewhat more complex and requires a more regional geological understanding for assessing the hydrocarbon perspective.

Exploration success in the Kurdistan and Lorestan hydrocarbon provinces, as in many other parts of the Middle East, is characterised by a fortuitous juxtaposition of source rock, reservoir and seal in structural traps. Common seepage in the region testifies a working petroleum system, principally driven by the thick, bituminous limestones of the Jurassic Sargelu and Naokelekan Formations.

Hydrocarbons are mostly trapped within broad four-way-dip closure thrust-related anticlines hosting important fractured carbonate reservoirs at various stratigraphic levels within the Meso-Cenozoic sequence.

The understanding of the regional tectonic evolution, styles of compressional deformation and controls on regional stress patterns are helpful in unravelling the distribution fracture networks for characterising fractured reservoirs. The integration of remote sensing analysis, seismic interpretation, well data and the orientation of the present-day stress field lead to build consistent structural models that can be used during exploration and development phases.

This study reviews the structural style over the Kurdistan region of northeast Iraq (Kirkuk Embayment) and the Lorestan province of Iran (Pusht-e Kuh Arc) from regional to local-scale by integrating various data and methodologies in order to contribute in a better understanding of the compressional deformation styles, mechanisms and evolution of the trap-forming structures and their impact on hydrocarbon distribution. For this purpose, a series of regional cross-sections, constructed by integrating surface and available subsurface data, is presented through the main hydrocarbon fields and open license blocks. The report provides also an overview of the current exploration activities, fields and discoveries in the Kurdistan and Lorestan regions, focusing on the play types and the existing exploration potentials in the area. Furthermore, the report is supplied with a GIS project where distribution maps (facies, plays, domains, paleogeographies etc.), wells database, culture and geo-referenced data are included.

for more information
contact:

GEPLAN CONSULTING

Via L. Ariosto, 58 –
44121 Ferrara – ITALY

ph +39-0532 207770,
fax +39 0532 1920204;
e-mail: info@geplan.it;
website: www.geplan.it

HYDROCARBON PROSPECTIVITY OF THE ZAGROS THRUST BELT: KURDISTAN AND LORESTAN HC PROVINCES

REPORT CONTENTS

EXECUTIVE SUMMARY

- 1. INTRODUCTION**
 - 1.1 Objectives of the report
 - 1.2 Definition of the area and country boundaries
 - 1.3 Dataset and approach
 - 1.4 Structure of the report and content
- 2. EXPLORATION HISTORY AND HYDROCARBON POTENTIAL**
 - 2.1 Northern Iraq (Kurdistan Region)
 - 2.2 Iran
 - 2.3 Hydrocarbon Fields
- 3. GEOLOGICAL SETTING**
 - 3.1 The Zagros Thrust Belt
 - 3.2 Thrust belt architecture
 - 3.3 Tectonic domains of the Zagros
 - 3.4 Structure and tectonic style of the Zagros
 - 3.5 Tectonic evolution of the Zagros
 - 3.6 Present day stress field
- 4. STRATIGRAPHIC FRAMEWORK**
 - 4.1 Pre-Triassic deposits
 - 4.2 Triassic deposits
 - 4.3 Jurassic deposits
 - 4.4 Cretaceous deposits
 - 4.5 Tertiary deposits
 - 4.6 Mechanical stratigraphy of the Zagros Thrust Belt
- 5. TECTONIC FRAMEWORK**
 - 5.1 The Kirkuk Embayment in the Kurdistan Region
 - 5.2 The Pusht-e Kuh Arc in the Lorestan Region
 - 5.3 Zone 1 (NW Kurdistan)
 - 5.4 Zone 2 (NE Kurdistan)
 - 5.5 Zone 3 (Central & SE Kurdistan)
 - 5.6 Zone 4 (Pusht-e Kuh Arc of Lorestan)
- 6. PETROLEUM SYSTEMS**
 - 6.1 Source Rocks
 - 6.2 Reservoirs
 - 6.3 Seals
 - 6.4 Traps
 - 6.5 Basin Modeling
- 7. PLAY TYPES**
 - 7.1 General description
 - 7.2 Plays distribution
- 8. SUMMARY AND CONCLUSIONS**
 - 8.1 General conclusion
 - 8.2 Plays and hydrocarbon potential
- 9. REFERENCES**

Enclosures

- GIS project
- Main Fields information summary
- Maps
- Cross-sections

for more information
contact:

GEPLAN CONSULTING

Via L. Ariosto, 58 –
44121 Ferrara – ITALY

ph +39-0532 207770,
fax +39 0532 1920204 ;
e-mail: info@geplan.it;
website: www.geplan.it