

Unstable International Boundaries and FIG Publication NO 76

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SUMMARY

The goal of achieving stability is the leading essence of the boundary line in order to enable peaceful and productive environment, including safe legal order and arrangements on both sides of the boundary. This goal has been defined by the International Court of Justice. Part of the problems of boundary delimitations result from selection of unstable features, either man-made changing features, or natural geographic features. Such are boundaries along mountain crests and water sheds, as well as on dynamic earth's physiographic features, such as rivers, glaciers, lakes, shorelines, and even boundaries on dynamic land moving due to tectonic activities. Part of the problems of instability of boundaries in rivers, lakes and on glaciers are results of global warming.

Chapters 1, 2 and 3, deal with boundaries in rivers and lakes. Chapter 1 elaborates on methodological aspects regarding river boundaries. Chapter 2 elaborates on the practical case of the international boundary between Israel and Jordan, in its river section that follows the Jordan and Yarmuk Rivers. Chapter 3 deals with boundaries in lakes, showing examples of the shrinking of the Aral Sea and Lake Chad, and elaborating on the example of the changes in the Dead Sea level and shores due to global warming and man-made influence.

Chapter 4 deals with the boundaries of Italy on the glaciers of the Alps. It analyzes the continuous gradual process of melting of the ice over the last century as a result of global warming. The original agreed delimitation of the international boundaries along the crests of the mountains used to be on icy crests. The melting of the ice exposed the rocky crests. The article analyzes the process of negotiations between the concerning parties and introduces the chosen solution called the moving border.

Chapters 5 and 6 deal with the uncertainty of delimitation and demarcation of international

boundaries on the long run, due to dynamic plate movement. Chapter 5 looks at the geodetic and geophysical issues that earth dynamics may impose on the reliable enduring definition of boundaries, being aware that no place on the surface of the Earth can be truly considered to be fixed in place due to pervasive tectonic motion. The practical case of the Iraq-Kuwait Boundary is discussed. Chapter 6 reviews surveying standards and datums used to support boundary positioning. Poor boundary delimitations may contribute to instability of the boundary and to boundary conflicts. It refers to the problem to maintain permanent stability of boundary monuments and coordinates, arguing that local reference systems may not be adequate for maintaining the stability of boundaries, suggesting that boundaries should be connected to regional densification of ITRF.

FIG Publication NO 76 has been prepared under the framework of FIG Commission 1, WG 1.3 on International Boundary Settlement and Demarcation.

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