Planungsniveau, Landklassifikation und Kartierungsmaßstab

Abb. 1: Landerkundung und Kartierung

Ziele und Schritte	Intensität	Kartenmaßstab im Mittel	Identifikation und Einzelflächengröße
Auffinden von Landressourcen	Obersicht	1 : 250.000	Bodengesellschaften, Vegetationsareale 1.000 ha
Projektlokation	Semi-detailliert	1 : 50.000	Bodentypen und Landklassen 100 ha
Durchführbarkeits-untersuchungen	Detailliert	1 : 20.000	Bodensubtypen und Landsubklassen 10 ha
Projektplanung und Projektausführung	Intensiv	1 : 5.000	Bodenformen und Landeignungseinheiten 1 ha

Abb. 2: Landerkundung und Planung der Landerschließung

Intensität der Landerkundung	Planungsschritte für die Landerschließung
Obersicht 1 : 250.000	Regionalplanung aufgrund qualitativer Bewertung der Landnutzungsmöglichkeiten
Semidetailliert 1 : 50.000	Einzelprojektfindung aufgrund qualitativer/quantitativer Analyse der Landnutzungsmöglichkeiten unter ökologischen und ökonomischen Gesichtspunkten
Detailliert 1 : 20.000	Projektgründung und Verfahrensentscheidung aufgrund technischer und wirtschaftlicher Durchführbarkeitsuntersuchungen
Intensiv 1 : 5.000	(Technische) Planung und Ausführung des (Bewässerungs-) Projektes bei vorhandenen und/oder zu schaffenden Bedingungen

(Schaffer, 1978)

Quelle: Diestel, 1993

Maßstäbe und Beprobungsdichten

Table 1 gives a review of various map scales and the density of observations per ha or acre required for very detailed and less detailed surveys.

scales of final maps		density of obs. for average scale		field distance
average	variations	9 obs/sq.cm	4 obs/sq.cm	
1: 5,000	1: 1,000 - 1: 7,500	36/ha [1)]	-	15 m
1: 10,000	1: 7,500 - 1: 25,000	9/ha [2)]	-	30 m
1: 25,000	1: 15,000 - 1: 35,000	-	1/1½ ha [3)]	125 m
1: 50,000	1: 35,000 - 1: 75,000	-	1/6 ha [4)]	250 m
1:100,000	1: 75,000 - 1:150,000	-	1/25 ha [5)]	500 m
1:200,000	1:150,000 - 1:250,000	-	1/100 ha [6)]	1 km

(Veenenbos, 1974)

Table 1 Density of observations required for the production of reliable soil or landclassification maps.

1) ca. 15 per acre

2) ca. 3½ per acre

3) 1 per 4 acre

4) 1 per 5½ acre

5) 1 per 62 acre

6) 1 per 250 acre

1 ha = 10,000 sq. m.;
1 acre = 4047 sq. m.

Quelle: Diestel, 1993

FAO Framework for Land Evaluation

- entstanden 1976 mit dem Ziel, eine Methode zu entwickeln um gegenwärtige oder geplante Landnutzung zu evaluieren
- die Methode gibt lediglich einen Rahmen vor (framework)
- die Evaluierung muss im Hinblick auf spezifizierte Nutzungsarten erfolgen
- die Bewertung setzt einen Vergleich zwischen den möglichen Vorteilen und dem notwendigen Aufwand für verschiedene Landnutzungstypen voraus
- ein multidisziplinärer Ansatz ist notwendig
- die Nutzung muss nachhaltig sein
- Bewertung beinhaltet einen Vergleich zwischen verschiedenen Nutzungsformen

Terminologie

erms used in FAO land suitability classification

Table 5.

FAO term	Meaning	Examples
and quality	Complex attributes which directly affect specific kinds of land use; derived from land characteristics	Erosion resistance, water availability, flood hazard. Crop yield levels are aggregate land qualities
and haracteristic	Measurable or estimated parameter, use for land resource mapping	Slope angle, rainfall, soil texture type/salinity
iagnostic riterion	Land characteristic or quality which determines suitability of land for a particular use. Expresses the limitations of land for the given use, and the requirements of that use	Usually a combination of land qualities and/or characteristics 1/

ote: 1/ For example, a plant requirement for 'available oxygen in the root zone' could b specified as the period during which the redox potential (E_h) is less tha + 200 mV. Alternatively, seasonal depths to the GWT, mottling or even vegetatio types could be used as increasingly crude diagnostic criteria for the sam requirement.

Quelle: Bookers Tropical Soil Manual, 19

Schematischer Ablauf

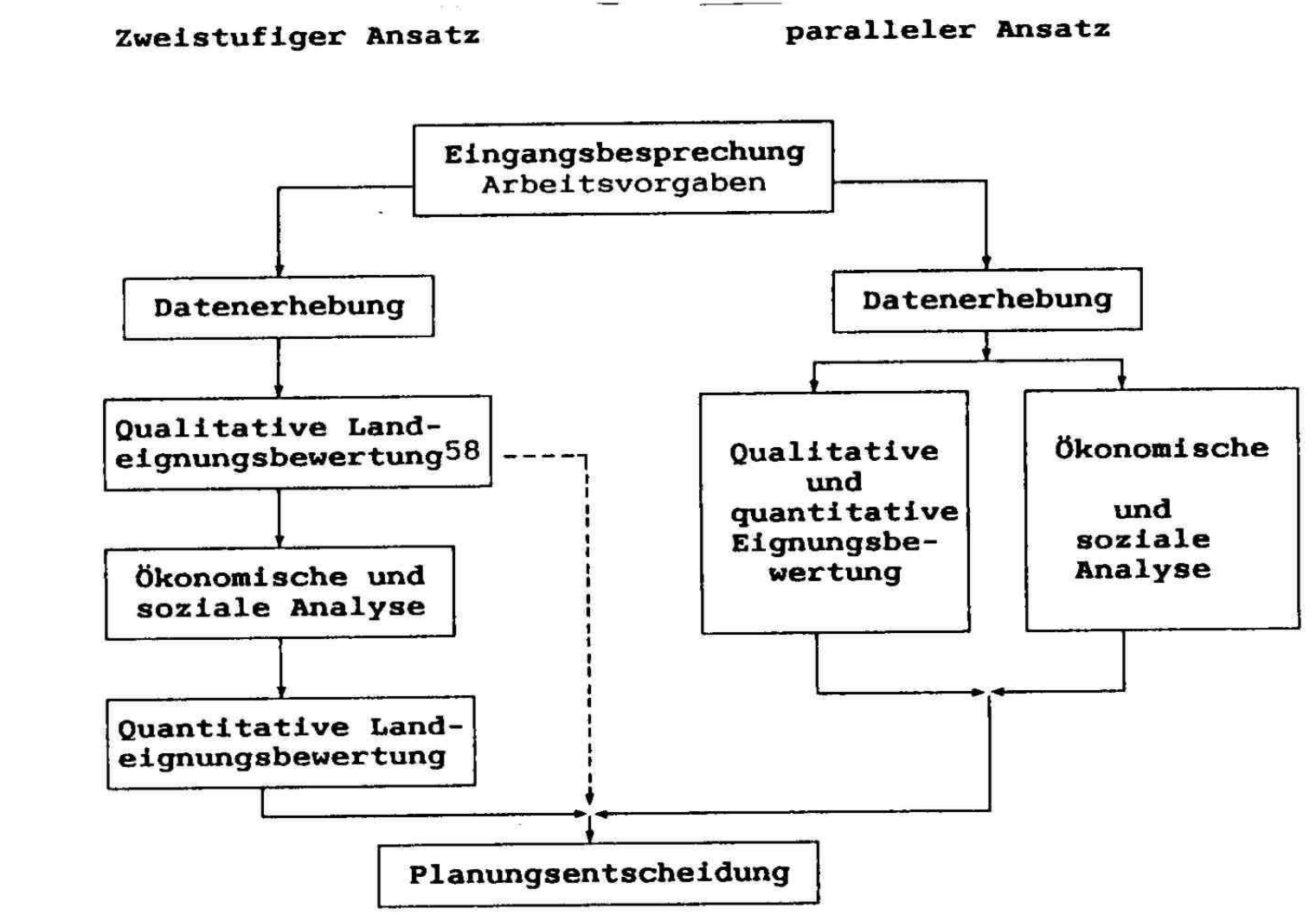
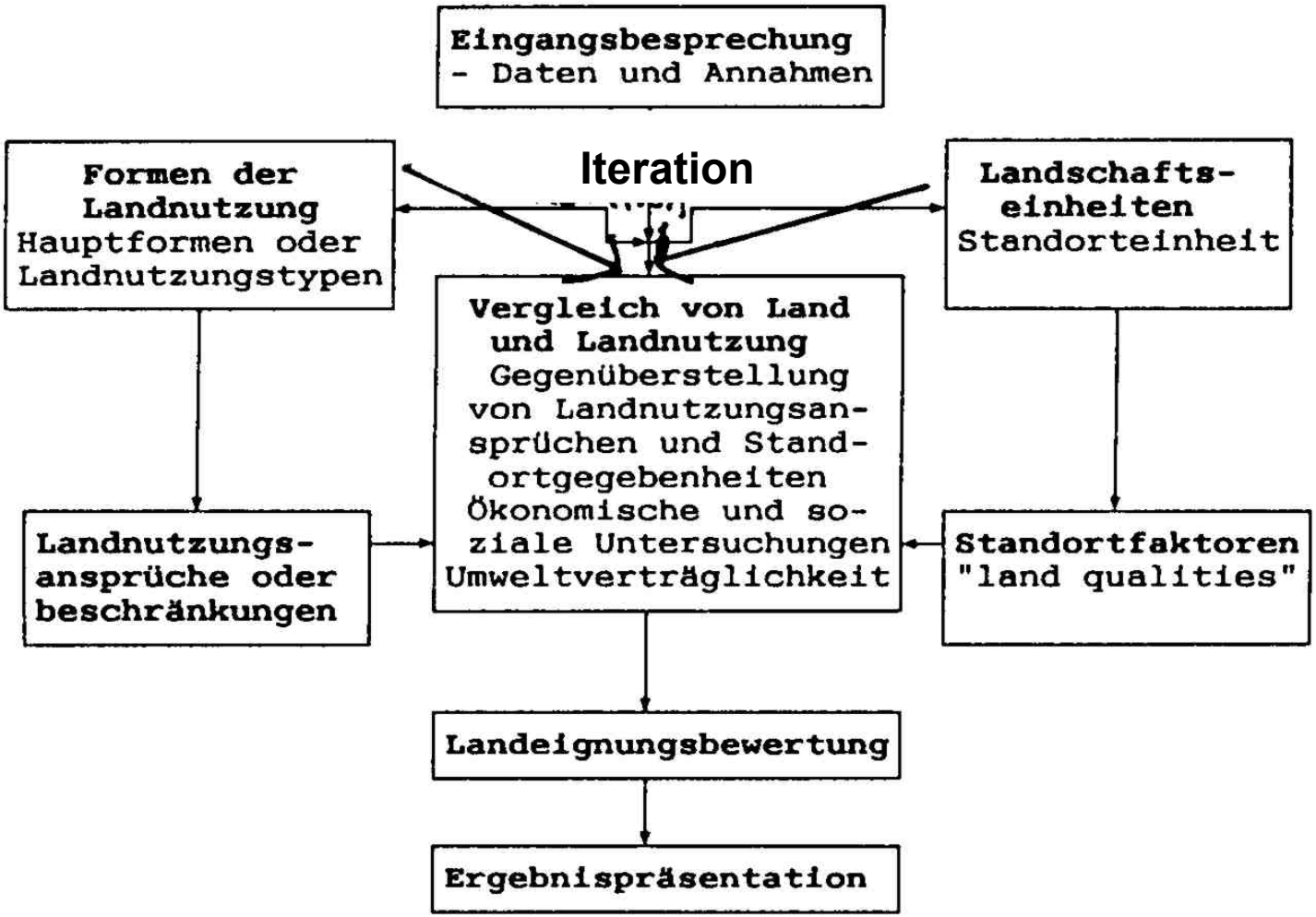
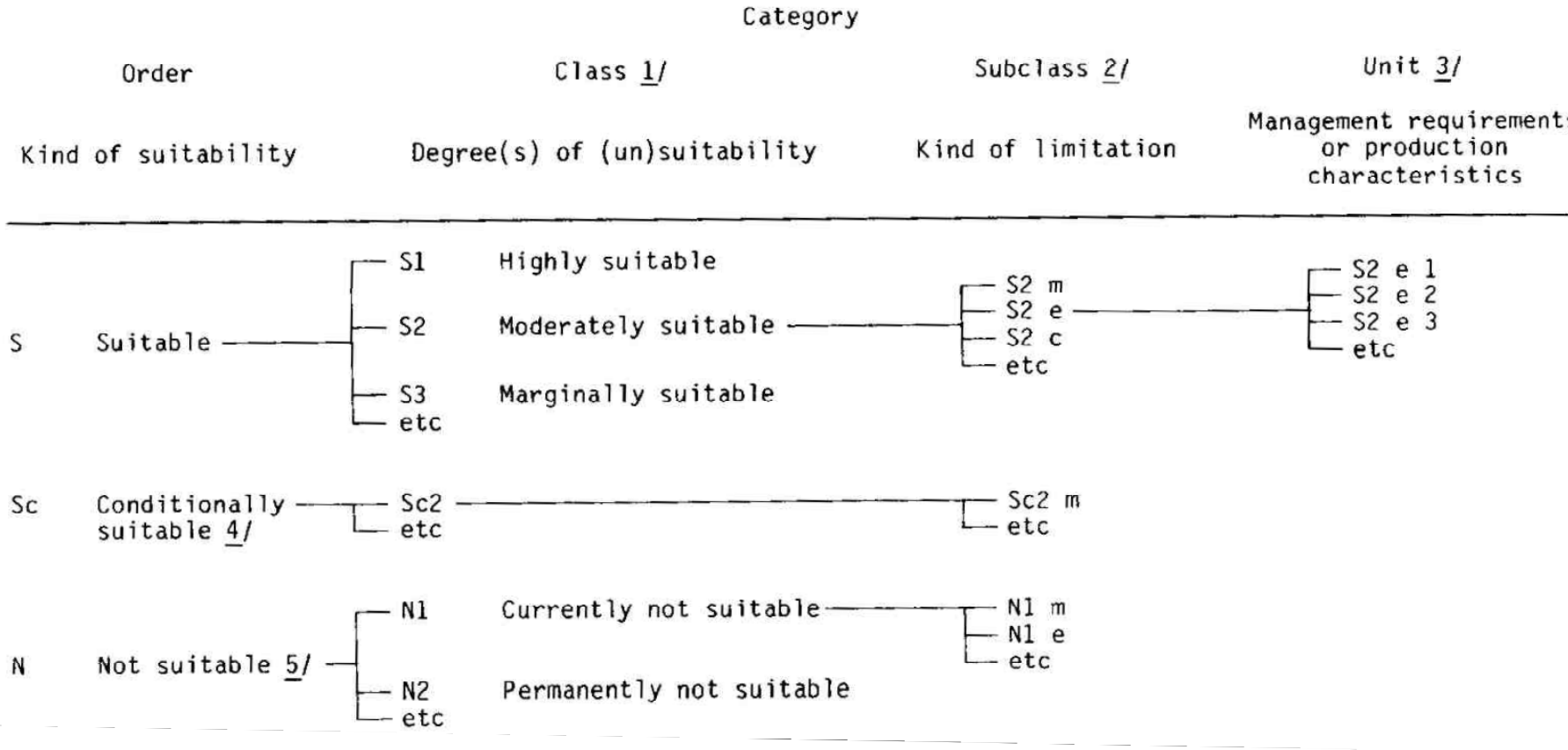


Abb. 4–22: Vorgehensweise nach dem FAO-*Framework*[60]
[nach FAO 1976 S.34]



Struktur



Quelle: Bookers Tropical Soil Manual, 1

Struktur

FAO recommended land class definitions
(for a system with three suitable classes)

Table 5.2

Class	Designation	Definition
S1	Highly suitable	Land having no significant limitations to sustained application of a given use, or only minor limitations that will not significantly reduce productivity or benefits and will not raise inputs above an acceptable level
S2	Moderately suitable	Land having limitations which, in aggregate, are moderately severe for sustained application of a given use; the limitations will reduce productivity or benefits, and increase required inputs to the extent that the overall advantage to be gained from the use, although still attractive, will be appreciably inferior to that expected on Class S1 land
S3	Marginally suitable	Land having limitations which, in aggregate, are severe for sustained application of a given use and will so reduce productivity or benefits, or increase required inputs, that this expenditure will be only marginally justified
N1	Currently not suitable	Land having limitations which may be surmountable in time, but which cannot be corrected with existing knowledge at currently acceptable cost; the limitations are so severe as to preclude successful sustained use of the land in the given manner
N2	Permanently not suitable	Land having limitations which appear so severe as to preclude any possibilities of successful sustained use of the land in the given manner

Quelle: Bookers Tropical Soil Manual, 1

Terminologie

mples of FAO land qualities

Table 5.4

Land quality	Symbol
Crop growth	
Water availability 1/) pore-size distribution and climatic effect	m
Oxygen availability)	o
Nutrient availability 1/	n
Toxicities	t
Land and crop management	
Erodibility	e
In-field trafficability and accessibility	a
Opportunity days for land preparation and harvest	h
Compaction (and resistance to)	c
Land improvement requirements	
Land levelling or grading	&
Vegetation clearance	v
Installation of drainage and irrigation	i

e: 1/ Note distinction between these land quality terms, which apply to the actual uptake a crop is able to make, and the land characteristic terms 'available water capacity' and 'available nutrient levels', which are measurements made as part of the land quality assessment; the latter also includes properties such as soil hydraulic conductivity, drainage status and rooting pattern.

apted from FAO (1976a, p 54).

Quelle: Bookers Tropical Soil Manual, 1

Ergebnispräsentation