



UNITED NATIONS



KONINKLIJKE ACADEMIE
VOOR OVERZEESE WETENSCHAPPEN
ACADEMIE ROYALE
DES SCIENCES D'OUTRE-MER

DESERTIFICATION: MIGRATION, HEALTH, REMEDIATION AND LOCAL GOVERNANCE

Guest Editors: André OZER & Danielle SWINNE

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2008



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ROYAL ACADEMY OF OVERSEAS SCIENCES
KONINKLIJKE AKADEMIE VOOR OVERZEESSE WETENSCHAPPEN



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DISCUSSION
MIGRATION, HEALTH, REMEDIATION AND
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Desertification Process in the Sahelian Belt of West Africa: What's the State of Play?

by

Yvon-Carmen HOUNTOUNDJI*, **, Nestor SOKPON**,
Jacques NICOLAS* & Pierre OZER*

KEYWORDS. — Integrated NDVI; Rainfall; Rain Use Efficiency; Trend Analysis; Desertification; Sahel.

SUMMARY. — The implementation of the UNCCD needs the identification of areas that record declining productivity of the vegetation over long-time periods. In this scope, we analyse the state of the vegetation productivity using 1982-1999 time series of NOAA-AVHRR NDVI data and compare it to rainfall data. For this, 354 rain gauges data distributed from yearly average isohyets 100 to 900 mm in five countries of West Africa are analysed. We use for trend analysis, the ratio between integrated vegetation index (INDVI) during the growing period (June to October) and the May to October sum of rainfall (RR). This ratio is a proxy of the Rain Use Efficiency which is widely accepted. Overall, 91 and 94 % of RR and INDVI data recorded positive trends over the 1982-1999 periods. Most stations in the Sahel were stable for the INDVI/RR (49.5 %). However, 37.8 % showed strong to very strong negative change in the INDVI/RR ratio, while only 1.3 % showed positive trends. The strong negative trends recorded in more than 1/3 of the analysed stations may reflect ongoing desertification processes in the Sahel and could be a starting point for the identification of hot-spot areas to determine where to take action to combat desertification.

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