

the majority of households in sub saharan africa rely to large extent on smallholder farming for food incomes and overall lively they produce most of the food consumed in this region however agricultural productivity in africa is still low and threatened by environmental social economic biological and other factors in fact text globally it is estimated that the yields of major crops could decline by up to 30% by 2050 and sub saharan africa is not immune to this challenge in the stage for more sustainable approaches organic agriculture is gaining greater recognition on the west studies show that organic agriculture comes along with some lower negative environmental impacts global studies is also highlighted that organic agriculture is about 20 to 25% less productive than conventional agriculture for sub saharan africa information on how organic agriculture performs in different context is still scarce there is not enough high quality data to show how organic practices actually perform once small hold the funds in comparison with prevailing farming practices in our study we therefore aimed at assessing the potential of organic agriculture to improve the productivity and profitability of smallholder farming in sub saharan africa we sought to create a scientific basis for answering important questions such as what should african smallholder farmers adopt organic agriculture ?this study which we carried out together with smallholder farmers at the researchers and other stakeholders so what did we do we selected 5 case studies each of them having a different organic initiative these case studies are spread cross different agroecological economic and commercial contexts in ghana and kenya in each case study we analyzed 300 to 400 organic and conventional farms over two years in doing so we were able to cover diverse farming systems with perennial and annual crops in humid as well as semi arid areas we covered certified as well as non certified organic farms which produced mainly for export or for the local market until now existing data about productivity and profitability of organic farming in sub saharan africa either like sample size only looked at single cases of organic agriculture suffered from two general or poor data quality or lack i like the sound comparison so for the first time we have the detailed data about how organic smallholder farmers in sub Saharan africa actually managed their farm in diverse settings over two consecutive years we first compared to the impacts of the initiatives on the farming practices and input use all five initiatives led to reduced use of conventional inputs such as synthetic pesticides and mineral fertilizers in one of the certified organic initiatives 92% of the farmers did not use any conventional inputs while the other four initiatives made only 50% or even less of the farmers not use any conventional inputs but none of the interventions led to widespread adoption of active organic management such as biological pest control intercropping or agroforestry the second question was how did organic management affect crop yields and profitability for answering this question we compared farmers who completely work without chemical inputs with similar conventional farmers here we see for the four most important crops in the five different case studies the data about yields input cost labor cost and gross what's the margins of the organic farmers compared to the conventional farmers they found productivity and profitability of most of the crops were not affected by organic management there was neither a higher nor a lower yield on organic farms and all who productivity was similar to the conventional farms but in the case study with the widespread adoption of organic practices productivity and gross margins for macadamia nut and coffee were three to four times higher indicated by the yellow bars also macy is more than doubled through this initiative if you compare all 1600 organic and

conventional farms in all the case studies we find farm incomes to be more than doubled on organic farms compared to conventional farms this is despite in most case studies the farmers could not realize any organic enterprise premiums if we assume that all organic farmers receive the price premium off on average 20% for their organic products incomes of organic farmers were higher in four of the five case studies overall case studies the income could be almost summing up we found an excellent economic and economic performance of organic agriculture in one of the five case studies this indicates the potential that organic agriculture in sub saharan africa can have if the main agronomic and governance challenges are addressed and smallholder systems are managed well however in most of the case studies this potential was not used or only used to a limited extent while organic agriculture aims at an agroecological system design our study shows that the reality in sub saharan africa looks very different farmers in sub saharan africa offline understand organic agriculture as a restriction in management however if the aim is to make farmers work according to ecological principles organic farming needs to be reframed formula do not use specific inputs to do better accurate ecosystem management approach capacity development both governmental and non governmental needs to be targeted two the main challenges lack of organic inputs lack of knowledge about agroecosystem management and lack of access to local and international markets with price premiums for future scientific political and societal debates about the potential of organic agriculture in sub saharan africa we suggest to explicitly distinguish among the various intentions behind organic agricultural practises that is with a certified organic non certified organic or organic by default the degree to which farmers passively or actively implement and manage the principles of organic agriculture on their farms should also be distinguished this will help to resolve some missed understandings about what organic agriculture can contribute towards food security and rural this will also facilitates targeted future support for organic farming and agroecology in sub saharan africa two should policy and decision makers support organic agriculture in sub saharan africa...