



United Nations
Economic Commission for Africa



COP21 Africa pavilion event proposal

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DEC 11 10:00 – 11:30

CONVERSION OF BASMATI 370 RICE FROM C₃ TO C₄ RICE

THEME: “ADAPTABLE BASMATI370 FOR FOOD SECURITY AND HEALTHIER WORLD”

Abstract:

Climate change has adversely affected food production and health. Endeavors to produce more food have contributed to climate change and more environmental-related diseases. Over 50 million people are projected to face malnutrition by 2050 if this is not stopped. One way of mitigation is the initiative to transform Basmati370 rice from a C₃ to C₄ photosynthetic pathway. The C₄ crops are more efficient in fixing carbon dioxide to biomass and will increase food yields while consuming less water and increasing sequestration of greenhouse gases. In addition to an increase in yields, farmers will gain higher relative incomes as cost of production will be reduced and more land will be available for reforestation. This side event will discuss the initiative and potential of converting Basmati370 rice from the C₃ to C₄ variety to enhance food security and health.

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Climate change has adversely affected food production and health. Endeavour to produce more food has contributed to climate change (GoK 2010) and more environmental related diseases. Over 50 million people are projected to face malnutrition by 2050 if this is not stopped. One way of mitigation is the initiative to transform rice from c3 to c4 photosynthetic pathway. The c4 crops are more efficient in fixing carbon dioxide to biomass. This is intended to increase food yield and also and draw more carbon dioxide from the atmosphere. Additionally, Basmati370 rice is the preferred species in Kenya because of its aroma, thus the target to transform it to C4 crop will probably provide more food on the table. In addition the following benefits will be realized; production of Basmati with less water cost; reduced reliance on paddies to

produce rice will preserve the water, reduce methane emission and increase food security; Higher relative income for farmers since cost of production will reduced; the C4 rice will increase sequestration of greenhouse gases hence friendlier climate with less diseases; High rice yield will save pressure on land and release more land for forestation; Higher yield will provide food for growing population. Thus; the main objective is to produce Basmati370 that has C4 photosynthetic pathway and with rainfed genes from maize, sorghum and wild so as for it to fix CO₂ more than its current C3 status

Key words: Carbon dioxide, Rice, c4-photosynthetic pathway, climate change.