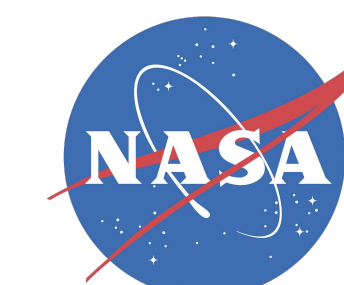




Subnational Yield and Production Forecast in West Africa



USAID FROM THE AMERICAN PEOPLE



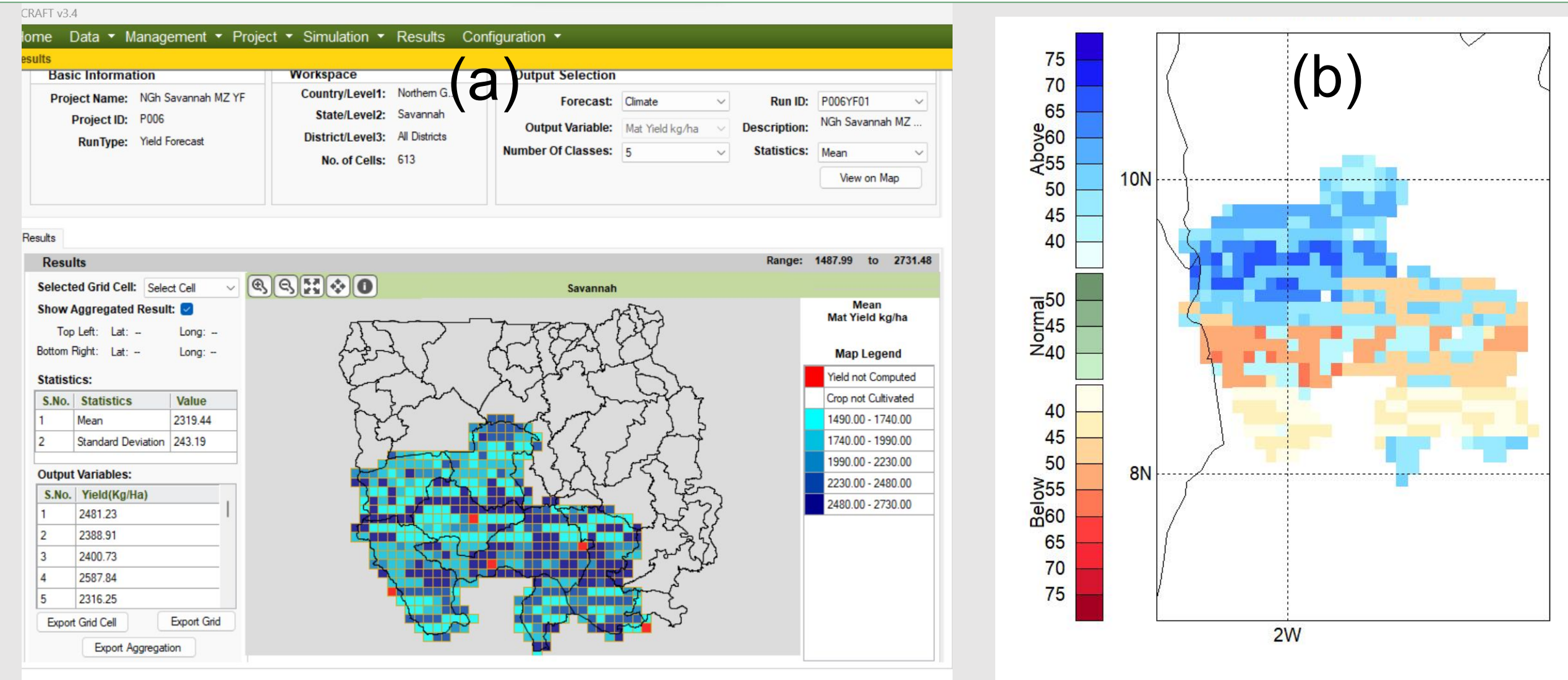
SERVIR WEST AFRICA

SERVIR West Africa responds to the need for local seasonal yield and crop production forecasting. The University of Florida is collaborating with GMet to operationalize the CCAFS Regional Agricultural Forecasting Tool (CRAFT) in Ghana. The tool connects seasonal climate predictors to crop yield forecasts and links EO estimates of crop type maps with production forecasts. The goal is to generate more localized, accurate, and earlier forecasts to assist regional and national policy and decision makers.

Partners & Collaborators

- GMet – Ghana Meteorological Agency
- MoFA – Ministry of Food and Agriculture, Ghana
- GSS _ Ghana Statistical Service
- UG – University of Ghana
- AGRHYMET – Regional Meteorological Center
- CERSGIS - The Centre for Remote Sensing and Geographic Information System
- CSE - Centre de Suivi Écologique
- ANACIM - National Agency for Civil Aviation and Meteorology
- DAPSA - Department of Agricultural Analysis, Forecasting and Statistics
- AFRIGIST - African Regional Institute for Geospatial Information Science and Technology
- ICRISAT - The International Crop Research Institute for the Semi-Arid Tropics

Spatial yield forecast on 2021 June 15 (a) and probabilistic yield forecast for Savannah region (b), Ghana

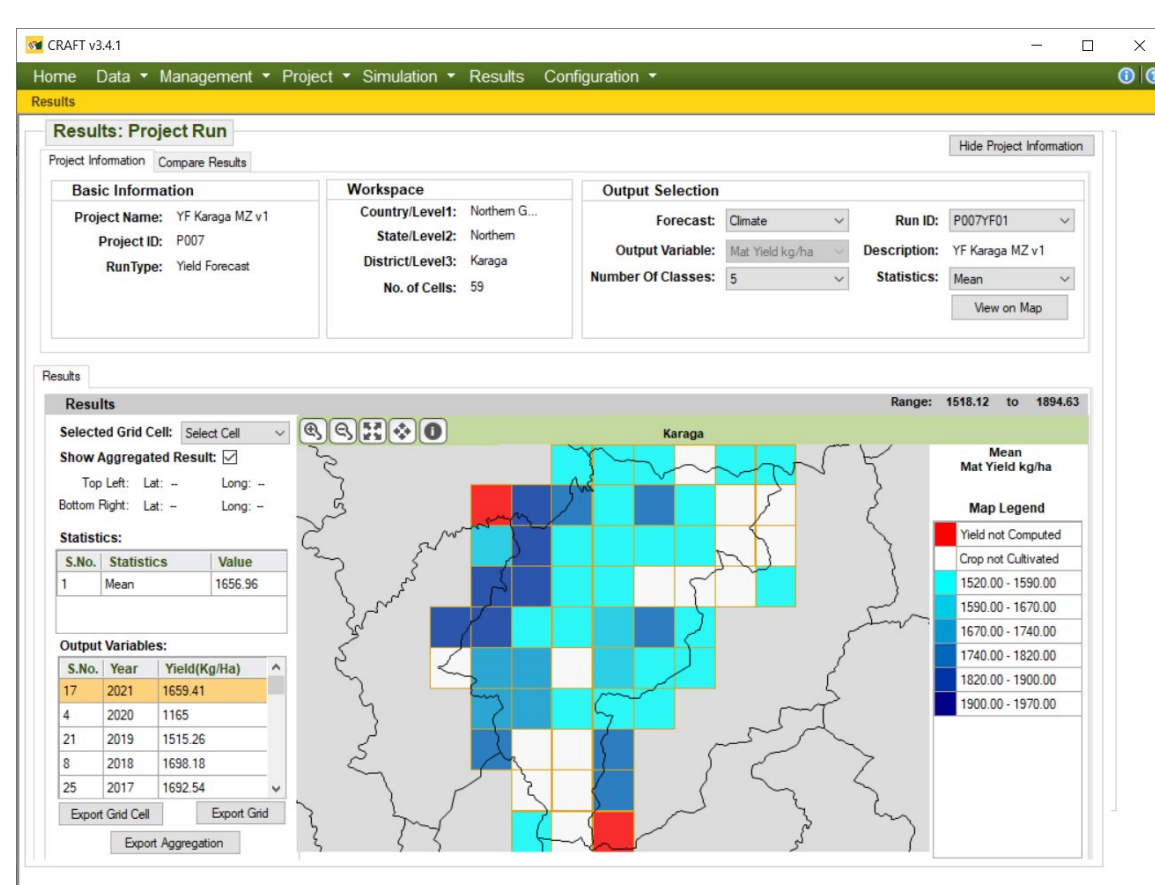


Forecasts were conducted with various lead times of up to 3 months. The June 15, 2021, forecast is demonstrated for the Savannah region (a). The selected predictor (SST) was for May-June-July(MJJ). The regional yield forecast was 2216 kg/ha with an error of 269 kg/ha or 13.8% compared to the reported one. From the forecast results, a probabilistic yield forecast was derived (b)

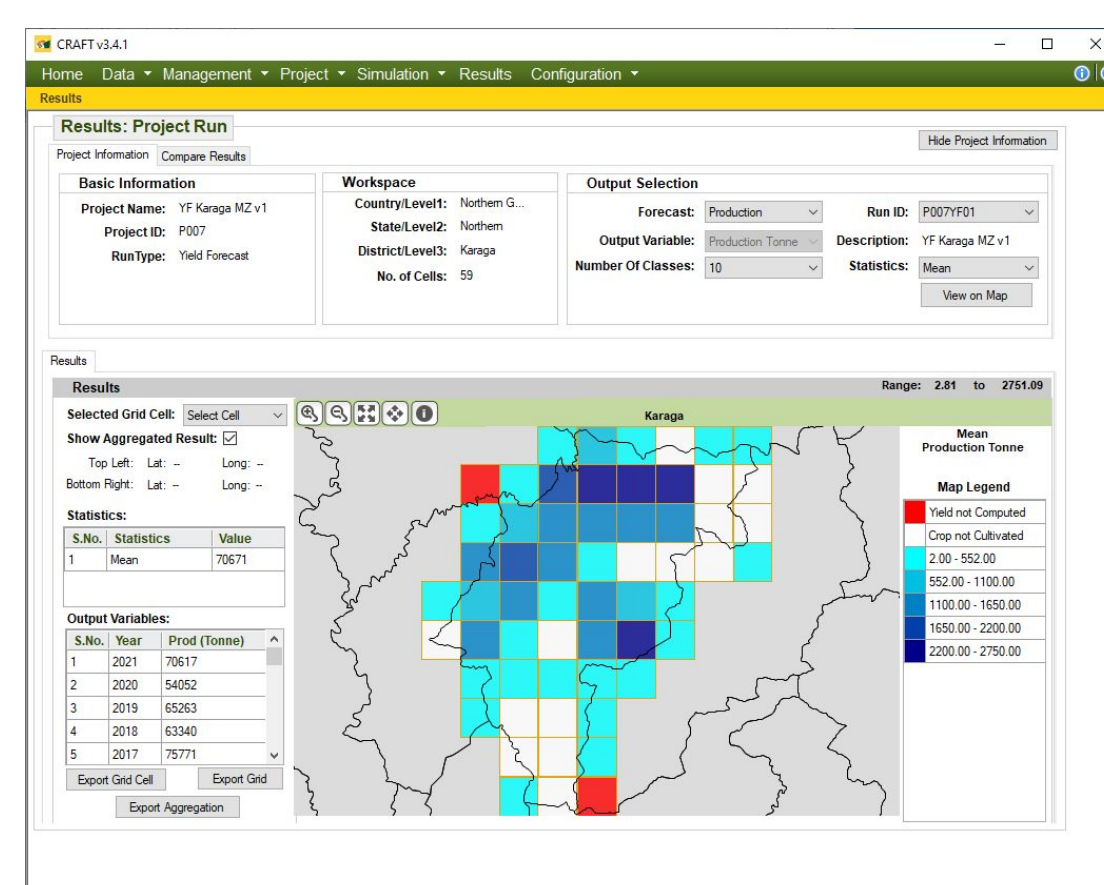
Outcomes & Impacts:

- Capacity on CRAFT in WA (Twenty participants from GMet, CSE, AFRIGIST, etc., interested in spatial modeling for their work-related tasks, trained on CRAFT)
- Initial operational capability of CRAFT successfully tested in Ghana by GMet for spatialized, district-level crop yield hindcast for Maize
- Sensitivity analysis of the CRAFT production forecasts to cropland/crop type map inputs for Ghana
- Collaboration with AIMS on SIGP
- **Potential impact:** GMet's capability to strengthen stakeholders' decision-making preparedness and, ultimately, food security

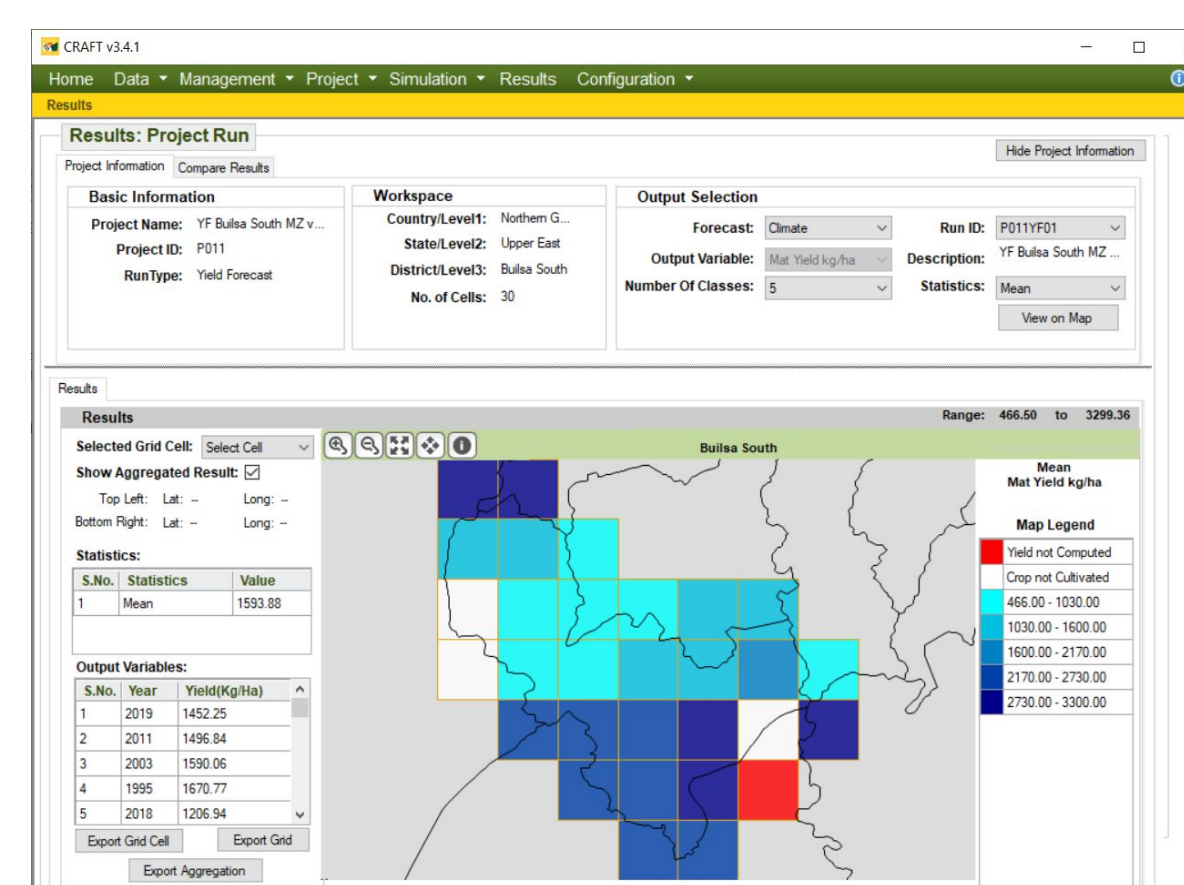
Maize yield forecast on June 15, 2021 for Karaga district in Ghana



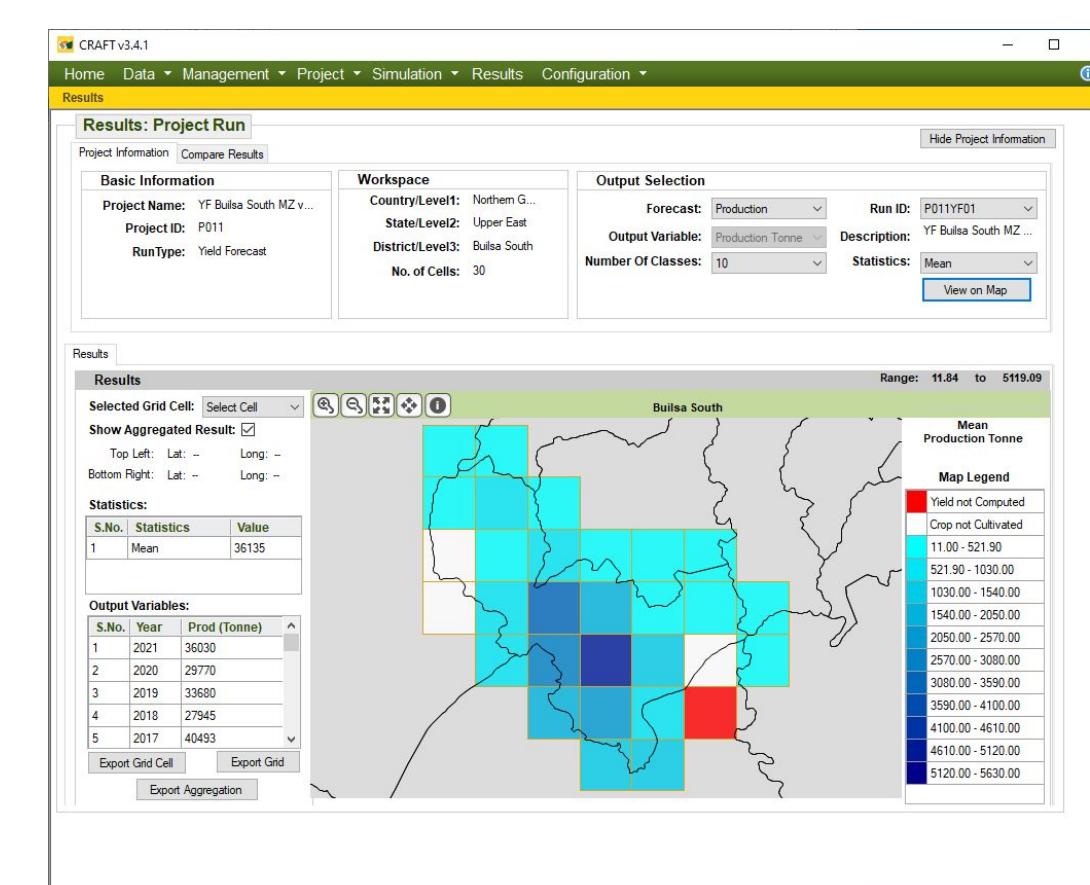
Maize production forecast on June 15, 2021, for Karaga district in Ghana



Maize yield forecast on June 15, 2021, for Builsa South District in Ghana



Maize production forecast on June 15, 2021, for Builsa South District in Ghana



Next Steps:

1. Operationalize service in Ghana in collaboration with GMet, CERSGIS, MoFA, and GSS.
2. Upscale forecasting service to the Senegal peanut basin in collaboration with CSE, DAPSA, and ANACIM.
3. Forecasting needs assessment in Nigeria in collaboration with NIMET, AFRIGIST, and ICRISAT.
4. Collaboration with AGRHYMET on the integration of S2S with CRAFT.