Picturing Agriculture: How Non-Western Farmers Are Represented in Research Literature

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Abstract

On websites and industry publications alike, a common image used to promote the use of GM seeds is that of a solitary African woman, working her crops. This study considers similar representations and aesthetic changes over time in imagery published by the CGIAR, a global network of research centers that produce improved crop seeds. The study aims to identify how non-white agriculturalists are presented to the west. The research examines a random sample of images drawn from the entirety of CGIAR's online database which dates to the late 1960s. In all, the research considers a total of 163 images, all cover photos of pamphlets, reports and other documents. The images derive from publications produced between the years 1985 and 2015. In order to explore questions about representations of gender, technology, race and ethnicity, and place, the images were coded for these qualities. Preliminary analysis of this coding reveals that the most common figure presented in these images is an African woman in some sort of outdoor setting. While 46.8% of outdoor images visibly entailed a farm location, about 48% of the outdoor settings could be described as "nondescript." On the question of technology, roughly 85% of the images did not contain any modern technology (i.e. electronics, hydraulic machinery, cellular devices, etc.), while nearly 58% of images contained no crops. This early analysis suggests an imagery that tends to represent non-western agriculturalists as people without technology, without shelter, and without cultural context. Setting it apart from earlier research on the subject, this looks at the decontextualization of individuals through the lens of an individual institution's history of image production. Continued analysis aims to identify the varied ways that context is stripped from the individual in these images, while considering the implications of this for debates surrounding new agricultural technologies.

Keywords: Non-Western Agriculturalists, Decontextualization, Representation

1. Introduction

1.1. The Images of Development

To the western viewer, often the only visual exposure they will ever have to an African, South American, or Asian inhabitant is through imagery presented by the news media and research groups. These types of images are critical, therefore, in forming western perceptions of life and society in non-western nations[3]. Development imagery in particular—that is, images disseminated by international aid and development workers—is especially impactful for the images' poignancy and widespread attention. While the goal of images like this is clear: to raise money and support for international development and relief efforts, photographs like this are often responsible for the maintenance of harmful stereotypes and imperialist sentiment among western consumers[12].

Concerted efforts are taking place to prevent racialization and objectification caused by development images[9], but these efforts are contained within the field of anthropology itself, and for-profit research centers are certainly interested in maintaining an image of the non-west which emphasizes the necessity of their work in places like Sub-Saharan

Africa. Even the mere discourse and terminology surrounding development imagery emphasizes the "otherness" of inhabitants of non-western nations to a westernized consumer[11]. That situation is the focal point of this study; the objective is to explore research imagery and discuss how it might be altered and deliberately affected by the aforementioned research centers to present a limited view of life outside the west to consumers. It is also important to determine how these centers change their imagery in response to shifting ideologies and political movements in the west, so this study tracks the changes in trending subject matter of development imagery over time, from 1985 to 2015.

In particular, gender is used as a tool in development imagery for displaying specific notions of non-western life, poverty, and identities[5]. Within the framework of this study described above, it became increasingly important to make gender a critical variable, with perhaps one of the most significant findings relating to the increase of women in the studied images. Women have long been used in marketable imagery of all varieties as a symbol of vulnerability, and their presence in these development images is no different. Although women have participated in smallholder agriculture for all of recorded history, it must be determined what has caused their steady rise in photographic representation. Data and past research points to further decontextualization on the part of research groups; they present a woman, who is already generally perceived as vulnerable by a western consumer, and remove all sources of context from the background, further stripping the subject of any visible means of supporting herself without the work of the research group. This, in turn, makes their research more marketable.

1.2. Africa

After image collection and sampling was completed as described in the methods below, it was discovered that 53% of all images in the study were images from Africa. Other images were from Latin America (20%), Asia (16%), and unknown locations (11%), but African images were certainly the most prevalent among images published by the CGIAR research centers. This being the case, Africa became a prominent exemplar of the conclusions reached from this study, and discourse surrounding African images becomes a useful platform for problematizing non-western development and research imagery as a whole. African images are highly politicized pieces[6], and one would be hard-pressed to find one which was not meant to influence the viewer in one way or another. The dominant discourses in news media and research publications creates a discursive environment which allows for the construction and proliferation of "otherness" perceptions of the realities of life in Africa[10].

African women, in particular, are often used as "fundraising objects," as described by Judith Böhnke[2]. The tendency in portrayals of African life are to show deficiencies, and the objectification and decontextualization of women—an already perceptually vulnerable group—contributes to the deficiency narrative which surrounds development imagery and research publications. Women are utilized to emphasize the inherent need of African people for aid and development research, this impact of which is the increased success and power of groups which conduct the aforementioned research. Africa is the current mainstage of global relief efforts, so it is impossible to understand the current dynamics in marketing and imagery in the development field without turning an eye to that continent.

1.3. Objectives

The primary goal is to not only identify changes over time in the representation of non-western people (and women in particular) in research imagery published by the CGIAR, but to discuss the possible causes behind the subject matter of these photographs. Through identifying this critical background, this study is able to stand in opposition to questionable marketing practices conducted by the for-profit research sector, and emphasize the need for smart consumerism, as well as the ratification and diversification of news and other media coming out of Africa.

This study also aims to lessen future attempts to use women as "fundraising objects" or political tool for international developers and researchers. Current development imagery is steeped in gendered identities and, when misused, can implicate deficiencies in Africa which do not exist on the scale that they are represented.

2. Methods

2.1. Image Collection

Images for this study were identified and collected over a period of two months from CGSpace[4], the CGIAR centers' document database, hosted by the International Livestock Research Institute. At the time of collection, CGSpace contained over 77,000 total documents, the cover photos of which were the subject of the search. Of these ~77,000, only 579 met the designed criteria for this study, namely that the cover of the document had a photographic image, containing one or more human beings. Of these, 163 were selected using a stratified random sampling method which employed a true randomness algorithm designed by Dr. Mads Haahr in 1998[7]. Stratification was done by year, to ensure that an equal proportion of images would be selected for each year to provide for a complete body of data for analysis later. Images were then uploaded to a cloud-based app for qualitative research analysis named Dedoose, sorted by year, and prepared for coding.

2.2. Codes and Coding

A codebook (Figure 1) was designed to identify aspects of the subject, background, and geography of the images which would later be used for analysis of the images and possible intentional representation of subjects in certain postures, contexts, or locales. The primary function of these codes was to assist in cataloguing and counting parts of the images which could possibly be subject to manipulation by the publishers (i.e. the research centers) of the images. Decontextualization was an essential point of study, and the intent with these codes was to look for possible design choices which placed the subjects in a position of weakened context or vulnerability.

   Codes were applied systematically by going through each image, year by year, and applying one code from each theme for later counting and analysis. Every image was given a total of 13 codes, which described things like geographic location, race or ethnicity of the subject, background imagery, and whether or not the subject was smiling. Dedoose allowed for the organization of codes by category (in this case, by year), and a chart was compiled which indexed each image with its accompanying codes for analysis.

2.3. Statistical Methods

All codes were analyzed for frequency, but certain categories were further analyzed for changes over time in their presence within the research literature. I looked at these trends with respect to geographic location, gender, setting, and black and white or color. The method used for graphing trends was a multistep process. To ensure that each time period would contain enough data points to be significant, images were separated into groups of every ten years (i.e. images published from 1996-2005,etc.), and then graphed using a histogram. Codes related to geographic location were compiled, counted, and divided by larger region to create a pie chart of the image's geographic origins.

Figure 1. Codebook designed for analysis of the images in this study. Each image was applied one code from each theme.

Theme	Definition	Code
World Location	Geographic location where photograph was taken. Regions defined by the United Nations Statistics Division M49 geographical regions codes	Central Asia Eastern Asia Latin America and the Caribbean Northern Africa Northern America Southeastern Asia Southern Asia Sub-Saharan Africa Western Asia
Smiling	Facial expression of subject	Frown Neutral Expression Smile Unidentified (face obscured, person located at a distance, back turned to camera, etc.)
Number of Subjects	Number of people shown in the image	[Number of people shown in the image]
Median Age of Person(s)	Average assumed age of all subjects in the image	Baby or Toddler Child Adolescent Young Adult Adult Elderly
Sex of Person(s)	Gender of subjects in the image	Male Female Both Males and Females Present Unidentifiable/Unkown
Race/Ethnicity	Subjects' race or ethnicity as inferred from their geographic location and skin tone	American Indian Asian/Indian Africa (or African Descent) Hispanic/Latino Pacific Islander White/Caucasian Unidentifiable/Unkown
Location of Person(s)	Physical context in which the subject is photographed	Farm Setting Laboratory Setting Office Setting Home Setting Nondescript Outdoor Setting (Typically, outdoor space with common features, i.e. desert background, jungle background, plain wall, etc. that do not easily identify the intended use of the land or structure) Nondescript Indoor Setting Market Setting
Presence of Technology	Presence in the image of cellular devices, hydraulics, vehicles, computers, or other machinery or electronics considered to be modern technology	No Technology Present Technology Present
Coloration of Image	Whether the image was full color or B/W	Black and White Color
Location of Photo (Vertical)	Location of photo on the physical document on the Y-axis	Top Middle Bottom Entire Document
Location of Photo (Horizontal)	Location of photo on the physical document on the X-axis	Left Center Right Entire Document
Approximate Size of Image	Approximate portion of the document taken up by the image	Entire Document Three Quarters of Document Half of Document One Quarter of Document
Depicted Crop(s)	Identified cultivated vegetation present in the image	Corn Wheat Rice Cassava/Yuca Unknown None

3. Data

The results of the analysis shed light on some surprising trends among the coded categories which were applied to the sample of images. The data was organized in a spreadsheet and analyzed for percentages by year. To find trends, the data was consolidated into percentages per five or ten years, then traced over time. The first category to be fully analyzed was the geographic location where the image was taken. Overall, the data showed that roughly 53% of the sample images were taken in Africa, the next closest being 20% of sample images from Latin America. Despite the large percentage of images deriving from Africa, data shows that in the first five years covered by this project, from 1985 to 1990, 57.14% of the images were from Latin America, and nearly 85% of earlier images (starting in 1969)—which were not used in deeper analysis in this project—came from Latin America. 66.67% of images from Southern Asia were collected in the last five years represented in this study, showing neglect of—or simply a lack of resources to cover—food issues on the Indian Subcontinent until very recently.

The representation of gender in these images, an important result of the study, showed a positive trend. As previously discussed, women have participated in agriculture for millennia, yet the data shows that in the first ten years, only a third of the images depicted at least one woman. By the last ten years, they were present in 54.35% of images.

Setting of the images reflects the phenomenon of decontextualization that is occurring with these images. 57% of images in the first five years were from a farm setting, whereas just 28.57% were from an outdoor setting that could be considered non-descript, i.e. devoid of identifying agricultural/habitational features. However, the data strongly trends towards non-descript as time goes on. 42.19% of images from 2010 to 2015 can be considered non-descript, with 40.63% at a farm setting. This shows a recent preference for unidentifiable settings.

Despite the invention of color imagery in 1907, the imagery in this sample did not become primarily color until the mid to late 90s. In the first ten years, 50% of the images were still in black and white. After this time, however, the images are nearly 90% color, and black and white is only used as an artistic or dramatic effect, such as in the image depicting Papua New Guineans on a publication entitled "Seeds for Needs" (Figure 2).

The rest of the data was not analyzed for changes over time, since the overall prevalence of the individual codes remained fairly static across the thirty years of imagery considered in this project. 35.58% of images showed a smiling person, with 47.24% having a neutral expression. Almost 80% of all images depicted mostly adults. The next largest category, with 9.2% of images, was children. As for ethnicity of the subjects, it shows a similar result as the geography. Just over half of depicted peoples were African (or of African descent), while the next largest categories were Hispanic/Latino (18.4%) and Asian/Indian (14.72%). As with the geography, this did change somewhat over time, starting in the early years with almost exclusively Hispanic/Latino subjects, and ending over time with almost exclusively African peoples depicted in the images. But again, there is a noted lack of emphasis on southeast and central Asia. 84.66% of images contained no technology. Those with technology had a fairly consistent distribution through the thirty years considered in the study, with only a slight increase (as a result of cell phone introduction) in the latter half of the sample. 57.67% of images contained no crops
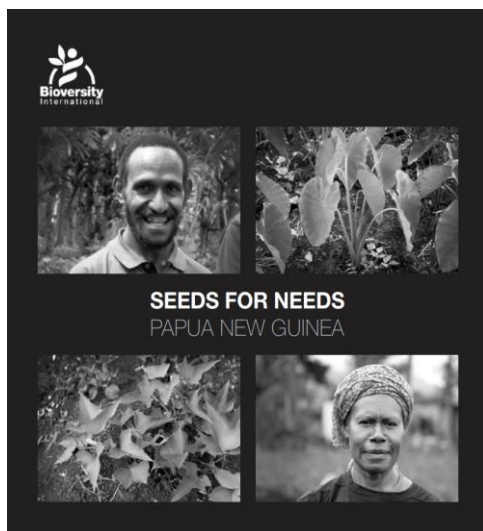

Figure 2. This image shows the dramatization of certain images using black and white rather than color imagery.

4. Conclusion

The data presents a number of important conclusions. The first, represented by the geography statistics, is that locations such as central Asia and the Middle East are underemphasized or neglected by researchers at the CGIAR. It is also notable that agricultural issues on the Indian subcontinent, containing 1.7 billion people, have been largely ignored for the better part of the years used in this study. The initial prevalence in Latin American publications is explained by the CIAT (the CGIAR's center in South America), being the earliest center to begin publishing large amounts of research, however the CGIAR now possesses research centers all over the world capable of studying all manner of issues from livestock productivity to plant death in drought.

Based on the objectives of this study, the increase in depicted women from 1985 to 2015 provides insight into a new focus of research centers on not only women in particular as a result of feminism, but also on providing a curated representation of Africa. This image is one of weakness, where subjects are depicted generally without technology, crops, or physical context in the form of a farm or village. Global agencies have emphasized the importance of the introduction of communication technologies to Africa[1], yet this increase in technology and global interconnectedness has failed to make its way into these published images, with the data showing that it instead has remained static over the course of the 30 years of the study. The deficiency narrative marketed by research groups necessitates that Africans be shown this way. The presence of technology would make an indication of progress, and perhaps give the impression that Africa was modernizing to the point of self-sufficiency. We can look to a particular image from the study which shows most of the general norms across the sample[8] (Figure 3), and exemplifies the lack of context afforded to the subject in these images.

Another tool of decontextualization is the background imagery used. Cultural context and indications of self-sufficiency are given by farming settings, or perhaps placement in a village market, however many of the subjects have been increasingly photographed in places where they cannot be seen in their natural living context, such as in Figure 3. This is also evident in the lack of crops across the images, emphasizing the subjects' need for agricultural research which the CGIAR is providing to give food to the "deficient" African population.

The statistical results of this study are not explainable by naturally captured photographs, owing to our previous knowledge of the conditions of African life, leaving the conclusion that they have been deliberately designed and curated to influence the emotions and perceptions of the western viewers which will see them. The CGIAR is in the business of disseminating their research, and in the effort to maintain Africa's perceived need for their work, they have chosen images which will garner support among news outlets and possible donors. This conclusion is well supported by previous research on the subject, as well as the current data from this study, and going forward it is the hope that this data may be used to affect some change in the uses of global imagery.

Figure 3. This image by Solomon Kilungu depicts one of many African women used in publication imagery.

Note the lack of any external geographic or cultural features, as well as the lack of any "modern day" technology. The subject's surrounding environment does not provide an identifiable context in which a western viewer could place them.

5. Acknowledgements

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